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BEFORE THE GUAM PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:	) GPA DOCKET NO. 23-17
	)
	) **PETITION OF THE GUAM POWER**
LIQUIFIED NATURAL GAS (LNG)	) **AUTHORITY TO APPROVE THE**
	) **EPCM, PHASE I, LIQUIFIED**
	) **NATURAL GAS (LNG) PRE-**
	) **DEVELOPMENT STUDY, SCOPE, AND**
	) **COSTS**
_____	)

COMES NOW, the GUAM POWER AUTHORITY ("GPA"), by and through its counsel of record, THERESA G. ROJAS, ESQ., and hereby files GPA's Engineering, Procurement, and Construction Management (EPCM), Phase I, Liquified Natural Gas (LNG) Pre-Development Study petition for PUC review and approval.

I. BACKGROUND

Liquified natural gas is an alternative fuel that would allow GPA to diversify its fuel options and reduce costs. The new Ukudu Power Plant is a dual-fuel capable plant to operate on ultra-low diesel fuel or natural gas. In anticipation of GPA's long-term plan to procure and utilize natural gas at the Ukudu Plant the LNG Pre-Development study is needed to evaluate demand, study viable vendors, study shipment options, and study storage and infrastructure needs. Phase 1 of GPA's LNG Pre-Development study, is one of four (4) phases needed to

complete GPA's LNG infrastructure project. The LNG Pre-Development Phase 1 studies are to be performed by the Stanley Project Team of Stanley Consultants. GPA awarded Stanley Consultants its EPCM contract in December 2022; however, all tasks for GPA's liquified natural gas infrastructure project were excluded to develop scope evaluation and costs. The detailed context, objectives, and overall costs of the four LNG Phases, inclusive of the Phase 1 Pre-Development study are available and are attached at **Exhibits, A-005, and A-007-0026**. The cost for the LNG Phase 1 study is $1,809,000.00 (One Million Eight Hundred Nine Thousand and 00/100 dollars).

II. REQUEST FOR APPROVAL

GPA hereby petitions the PUC, pursuant to its Contract Review Protocol, to approve the scope and costs for Phase I of GPA's LNG Pre-Development Study with Stanley Consultants for One Million Eight Hundred Nine Thousand and 00/100 dollars ($1,809,000.00), plus a 20% contingency. The estimated completion time for Phase 1 is twelve (12) months; but this timeframe is subject to modification due to delays and damages caused by Typhoon Mawar.[1] All funding for Phase 1 shall be paid by GPA CIP funds and GPA shall return to request for any additional amounts for the remaining phases at a later time. In support of this Petition, the CCU has duly passed and adopted GPA Resolution FY2023-17 attached and incorporated by reference as if fully set forth herein as **Exhibit A.**

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[1] Typhoon Mawar struck Guam between May 24 and 25, 2023, and was a Category 4 typhoon.

III. CONCLUSION

Based on the foregoing, GPA requests the PUC's approval for Phase I of GPA's LNG Pre-Development Study with Stanley Consultants, for $1,809,000.00, plus a 20% contingency, as it is reasonable, prudent, and necessary.

RESPECTFULLY SUBMITTED this 29th day of May 2023.

By: _____
THERESA G. ROJAS, ESQ.
GPA Interim Counsel

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

GPA RESOLUTION NO. FY2023-17

RELATIVE TO THE APPROVAL PRE-DEVELOPMENT STUDY FOR LIQUEFIED NATURAL GAS UNDER THE EPCM CONTRACT

WHEREAS, Stanley Consultants was awarded the Engineering, Procurement and Construction Management (EPCM) contract in December 2022 to support the construction and commissioning of the Ukudu Power Plant and to support development and procurement of liquefied natural gas infrastructure (LNG) to supply natural gas to the new power plant; and

WHEREAS, the approved EPCM contract excluded LNG tasks to allow more time for scope evaluation and for LNG tasks to be submitted for approval; and

WHEREAS, in 2011 a preliminary feasibility study was completed by R.W. Beck on the importation of LNG to Guam and use of natural gas on GPA's generation fleet to support fuel diversification strategy in the 2008 Integration Resource Plan (IRP) for fuel security and fuel cost reduction; and

WHEREAS, the 2011 study evaluated projected fuel requirements for preliminary sizing, configuration and siting, estimated capital costs for terminal and piping infrastructure and fuel conversion of existing units, and discussed acquisition strategies and risks; and

WHEREAS, the 2012 IRP recommended a new generation resource and natural gas to meet future growth, integrate renewables, improve reliability, increase efficiency and reduce operating costs including fuel costs; and

EX A-001

WHEREAS, in support of the 2012 IRP, GPA held a forum in April 2014 to present GPA's IRP and discuss LNG as an opportunity on Guam which included local stakeholders and potential vendors for LNG infrastructure and supply; and

WHEREAS, at the request of the PUC as part of the review of the 2012 IRP, an updated LNG feasibility study was completed under the Program Management Office (RW Armstrong/CHA) and filed in June 2014 in the Resource Implementation Plan; and

WHEREAS, since then GPA has contracted the dual-fuel capable Ukudu Power Plant to be commissioned in 2024, retired generation units, committed to Renewable Portfolio Standard goals of 50% by 2030, and transitioned all fossil fuel generation to ultra-low sulfur diesel and ultra-low sulfur fuel oil; and

WHEREAS, fuel oil costs have soared due to global issues and continue to be extremely volatile; and

WHEREAS, Stanley Consultants, Inc. have presented a multi-phase process for LNG acquisition and transition; and

WHEREAS, Phase I is the initial pre-development work which includes for site evaluation, volume requirements, supply / shipping options, and risk development. This task will update prior studies to firm up the site selection options, viable technical LNG terminal options and estimated project costs. It will also update supply costs estimates, initiate supplier outreach and develop potential vendor listings; and

WHEREAS, Phases II and III are for infrastructure bid development, execution, and implementation that will be addressed later. Additionally, Phase IV evaluates transshipment within the region supporting neighboring islands; and

WHEREAS, the use of natural gas at the Ukudu Power Plant will reduce the fixed operations and maintenance (FOM) costs by 34% and the variable operations and maintenance costs by 6.25% as well as extend the interval period for maintenance schedules; and

WHEREAS, the overall schedule for LNG development to commissioning is estimated to take 63 months which includes estimate for contractor's permitting and financial close period; and

WHEREAS, the Phase I scope from Stanley Consultants is estimated at $1,809,000 and to be complete within 12 months.

NOW BE IT THEREFORE RESOLVED, the Consolidated Commission on Utilities does hereby approve the following:

1. The CCU authorizes the GPA General Manager to petition the Guam Public Utilities Commission (PUC) for approval of the Phase I LNG Pre-Development Scope to Stanley Consultants, Inc., EPCM for the new power plant, for $1,809,000 plus 20% contingency.

RESOLVED, that the Chairman of the Commission certifies and the Secretary of the Commission attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 25th day of April 2023.

Certified by:

JOSEPH T. DUENAS
Chairperson

Attested by:

PEDRO ROY MARTINEZ
Secretary

EX A-003

I, **Pedro Roy Martinez**, Secretary of the Consolidated Commission on Utilities (CCU) as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: 4

NAYS: Ø

ABSTAIN: Ø

ABSENT: 1

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EX A-004

Stanley Consultants LNG Scope:

1. Phase I: Pre-Development (12 months)
   - Preliminary conceptual site selection, and LNG receiving terminal, LNG storage, and regasification facility functional design
   - Business model analysis and selection
   - Industry outreach
   - Environmental, cultural, and construction permit survey
   - Project Execution Plan and Work Breakdown Structure Development
   - Regulatory support for PUC
   - Regulatory and stakeholder outreach support

2. Phase II: LNG Infrastructure Procurement (15 months)
   - Proponent outreach
   - Bidder pre-qualification process
   - Prepare draft bidding document
   - LNG infrastructure contract negotiations
   - Fuel contract and procurement for fuel supply

3. Phase III: LNG Infrastructure Implementation (24 months)
   - Engineering support during construction phase
   - Project management, post-construction, and regulatory outreach support

4. Phase IV: LNG/CNG Transshipment (OPTION)
   - Assess Potential LNG Demand for Bunkering and Regional Transshipment
   - Assess Potential LNG/Natural Gas Demand in Guam by Other Industrial/Commercial Users
   - Identify and Analyze On-island Transshipment and Distribution Options
   - Analyze Business Case and Estimate Viable Demand
   - Analyze and Implement Contracting/Procurement Options

Phase	Description	Estimated Cost
I	Pre-Development	$ 1,809,000
II	LNG Infrastructure Procurement	$ 1,731,000
III	LNG Infrastructure Implementation	$ 391,000
	SUBTOTAL	$ 3,931,000
IV	*Option : LNG/CNG Transshipment*	*$ 253,000*
	TOTAL	$ 4,184,000

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUAHAN
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Issues for Decision

Resolution No. FY2023-17:

Relative to Authorizing the Approval of Pre-Development Study for Liquefied Natural Gas Under the EPCM Contract

What is the project's objective? Is it necessary and urgent?
Since 2008 Liquefied Natural Gas (LNG) has been recommended as an alternative fuel that would address fuel diversification and reduce costs. The Ukudu Power Plant is a dual-fuel capable power plant that is designed to operate on ultra-low sulfur diesel (ULSD) or natural gas. It is estimated that the period from the pre-development study to commissioning of an LNG terminal will take over 5 years. A pre-development study will update prior studies to firm up the site selection options, viable technical LNG terminal options and estimated project costs. It will also update supply costs estimates, initiate supplier outreach and develop potential vendor listings.

Where is the location?
Apra Harbor

How much will it cost?
The Pre-Development Study is estimated at $1,809,000 for Phase I of a multi-phase LNG scope.

Phase	Description	Estimated Cost
I	Pre-Development	$ 1,809,000
II	LNG Infrastructure Procurement	$ 1,731,000
III	LNG Infrastructure Implementation	$ 391,000
	SUBTOTAL	$ 3,931,000
IV	*Option : LNG/CNG Transshipment*	*$ 253,000*
	TOTAL	$ 4,184,000

When will it be completed?
The study is expected to take 12 months.

What is its funding source?
CIP

The RFP/BID responses:
The ECPM contract was awarded in December 2022 to Stanley Consultants from re-solicited RFP-21-010. LNG tasks were excluded in the initial contract award to allow more time to review the LNG scope.

WORK GROUP 100: LNG PROJECT

WORK PACKAGE 101: LNG DEVELOPMENT

This Work Group encompasses the scope for providing a Pre-Development package for LNG exploration on the island. The LNG Pre-Development phase will develop a business model, provide industry outreach, establish preliminary conceptual site selections and storage requirements, evaluation of required permits, a project execution plan with work breakdown structure, regulatory support for PUC and provide regulatory and stakeholder outreach support. See following detailed descriptions.

Introduction

The Stanley Project Team understands the critical importance of developing the LNG infrastructure to bring LNG to Guam in the shortest time possible. GPA's capacity and energy payments could increase significantly if the Ukudu power plant does not switch from USLD to natural gas before the fifth anniversary of the IPP project's commercial operation date. Furthermore, LNG could lower GPA's generation costs as the fuel component of the Ukudu power plant's electricity charge could be reduced depending on the price of natural gas versus ULSD in the future.
Procurement and commissioning of the LNG infrastructure and contracting an LNG supply is now one of GPA's most significant priorities. Stanley has assembled a highly qualified team of experts to assist GPA with this priority. This team will be led by K&M and will include COWI and CH-IV as subcontractors to K&M. These three companies have worked together successfully advising other island utilities developing LNG import infrastructure. K&M will focus on transaction and procurement of LNG, COWI will provide LNG marine infrastructure technical expertise, and CH-IV will contribute LNG storage and processing engineering experience.

Understanding of the LNG Component of the EPCM Assignment

The Stanley Project Team will assist GPA in developing the business model, preliminary design and procurement specifications for the LNG infrastructure. This infrastructure will supply natural gas to the Ukudu power plant via the NG pipeline that is being installed as part of the power plant project. In addition, the LNG could be used to provide natural gas to other end users on Guam.

GPA envisions that the party contracted to provide LNG infrastructure and associated services will perform the following functions:

- Provide complete initial funding for the project
- Fund the acquisition of the property for the facility
- Pay for right-of-way, if necessary to connect to the NG pipeline installed as part of the generation project to the LNG infrastructure
- Design and construct the required LNG infrastructure facilities
- Agree for GPA to take an equity stake in the project after the initial commissioning of the new facilities
- Transfer the ownership of any fuel storage and distribution facilities to GPA
- Operate and Maintain the facilities
- Deliver natural gas to GPA's grid as required by GPA

GPA requires the Stanley Project Team to develop, in coordination with GPA, the business model to be used for this contractual relationship. The business model shall consider the following:

- GPA will be the sole off-taker for all services and fuel supply provided by and at these facilities.
- The LNG facilities shall consider the possibility of other uses of the LNG facilities by the LNG infrastructure contractor for LNG bunkering, regional LNG or CNG supply, and local Guam domestic supply for a negotiated franchise fee
- The LNG infrastructure cannot be pledged for any non-GPA direct business streams.
- An arrangement where the LNG infrastructure contractor provides LNG for the first five (5) to ten (10) years of the contract.
- The LNG infrastructure project may be structured as a public-private partnership under a BOT arrangement. The contract may be up to 30 years long after the LNG infrastructure commercial online date (COD).

EPCM Scope of Work for the LNG Component

The LNG infrastructure development work to be performed by the Stanley Project Team during this assignment will be performed in four phases as follows:

Phase 1: Pre-development

During this phase, the Stanley Project Team will estimate the LNG volumes required, evaluate LNG delivery options including review of specific ships, routes, transit times, shipping volumes, and frequency of shipments, analyze the available options for implementing the LNG infrastructure and LNG procurement, identify risks, recommend the preferred option, and develop project implementation plan.

Phase 2: LNG Infrastructure Procurement

During this phase, the Stanley Project Team will prepare the tender document and assist GPA in running competitive bids to develop the LNG infrastructure and negotiations with the winning bidder.

Phase 3: LNG Infrastructure Implementation

During this phase, the Stanley Project Team will assist GPA in managing the contract with the selected contractor responsible for implementing the LNG infrastructure. The focus will be on such issues as monitoring and supporting project permitting activities, schedule and change orders. The Stanley Project Team will also assist GPA in managing the scope of activities related to the LNG development undertaken by GPA following the terms of the agreement.

Phase 4: LNG/CNG Transshipment

As part of this phase, the Stanley Project Team will analyze the feasibility of LNG transshipment, including regional transshipment, LNG bunkering and LNG or natural gas distribution to other customers in Guam.

Figure 1 below shows the overview of the phases and tasks to be performed by the Stanley Project Team:

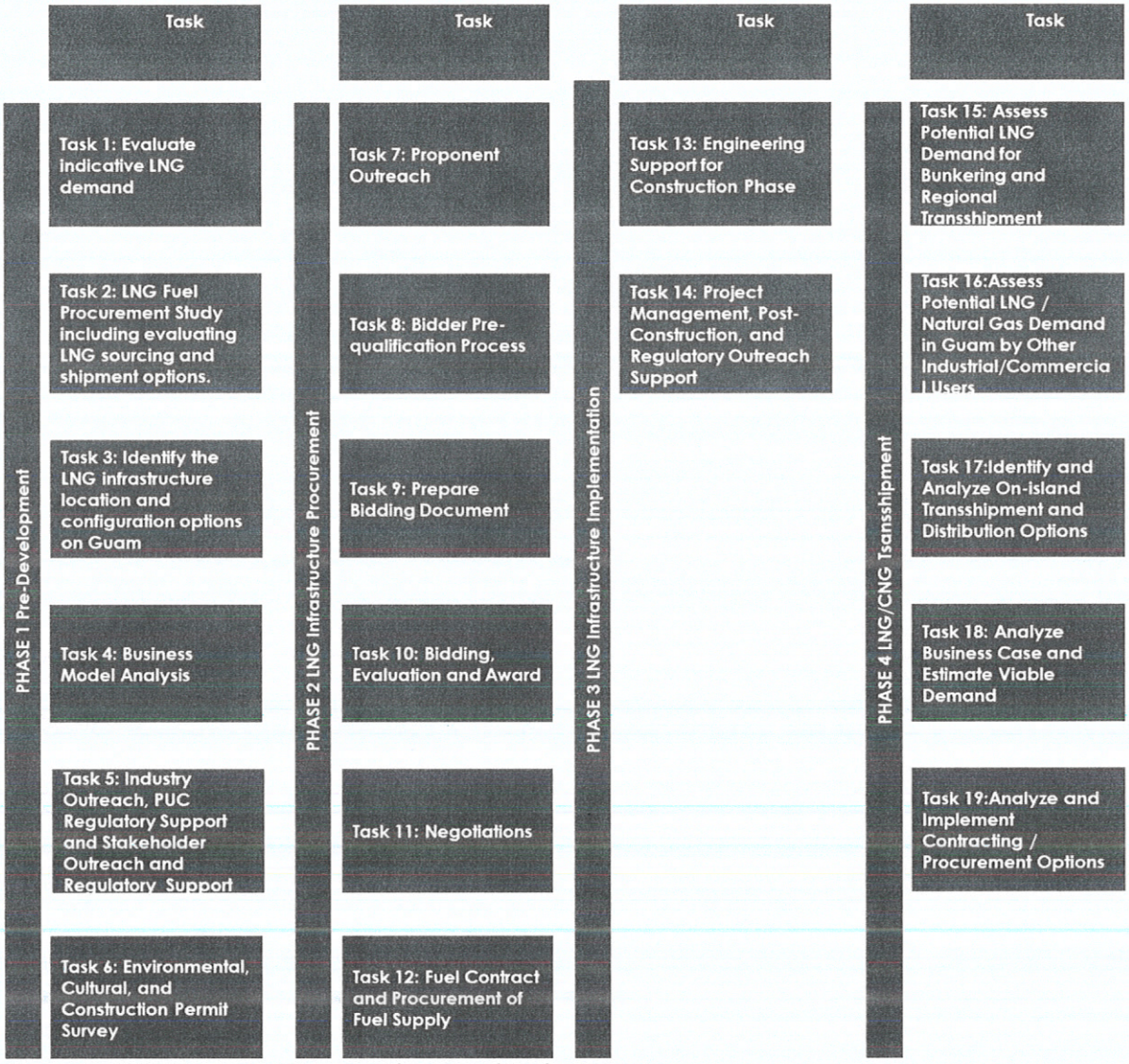

Figure 1 - LNG Component Services Phases and Tasks Diagram

The following section provides a more detailed description of the Stanley Project Team's approach and methodology to perform the LNG component.

PHASE 1 PRE-DEVELOPMENT

Task 1: Preliminary Conceptual Site Selections and LNG Receiving Terminal, LNG Storage, and Regasification Facility Functional Design

As the LNG import terminal market has matured, many innovative companies have stepped up with proprietary solutions to lower the cost of the terminal infrastructure. The approach outlined herein

seeks to take advantage of these innovative solutions. It would be impractical to start the import terminal procurement process without first identifying suitable site/s that are probable to be permittable. The Stanley Project Team will identify potential sites and configurations that facilitate permitting.

The approach will be to conduct pre-development activities, including selecting the terminal site and potential configurations and determining the best approaches for implementation prior to starting the terminal bidding process phase.

Subtask 1.1 Evaluate Indicative LNG Demand

Establish the potential LNG demand. LNG demand will impact the type of LNG ship, terminal and infrastructure and the cost of natural gas delivered at the Ukudu plant.

The LNG demand for the Ukudu plant will be determined based on the combined cycle plant's capacity, guaranteed heat rates specified in the ECA, and assumed dispatch (capacity factor). With the assistance of GPA, the team will also contact some of Guam's larger industrial and commercial consumers and the US Navy and military to identify the parties that may be interested in receiving LNG or natural gas for their operations. From this we will establish the indicative LNG demand used for further analysis of the LNG supply and infrastructure options.

Subtask 1.2 Evaluate LNG Sourcing and Shipment Options

This task will identify potential sources of LNG supply for the Guam LNG terminal, including regional LNG export terminals capable of loading mid/small-scale LNG ships, regional LNG import terminals capable of reloading mid/small-scale ships, and partial ex-ship deliveries on large-scale LNG ships transiting the Pacific. The Team will then identify the practical options for small-scale shipping from a subset of potential regional terminals to the Guam LNG terminal.

The Task will also estimate the FOB LNG price (USD/MMbtu) loaded from selected potential regional terminals considering current market conditions and market intelligence. A price estimate will be a range and is expected to an oil-indexed price formula, i.e. A% x Brent + B. The Team will then model the estimated unit freight costs (USD/MMbtu) for shipping LNG from selected potential regional terminals to the Guam LNG terminal for selected small-scale shipping options.

Based on the estimated regional terminal FOB LNG prices and estimated unit freight costs, and diversion costs for partial deliveries on large-scale LNG ships transiting the Pacific, the Stanley Project Team will calculate estimated LNG prices (US$/MMbtu) delivered ex-ship at the Guam LNG terminal.

The Stanley Project Team will consult with potential LNG suppliers (including NOCs, IOCs, and traders) regarding their interest in supplying LNG to GPA for the Guam LNG terminal, considering the LNG volumes estimated in Task 1. This work will include gathering information on potential LNG suppliers' supply preferences (FOB or ex-ship), their relevant regional LNG project development activities, the feasibility of partial deliveries on large-scale LNG ships transiting the Pacific, and their views on potential Guam LNG terminal configurations.

Lastly, the Task will develop a recommendation for the physical characteristics of the Guam LNG terminal configurations that will enable deliveries by the most competitive (least-cost) and of most interested LNG suppliers.

Subtask 1.3 Identify the LNG Infrastructure and Location Options for Guam

The Stanley Project Team will identify viable terminal configuration options, develop cost estimates for these options (including calculating the levelized cost of gas for each), and perform a comparative analysis to identify which options may be best for GPA.
The Stanley Project Team assumes that "cost" is the primary criterion to use to select a terminal configuration option. Environmental impact and timing would also be weighed as part of this analysis.

Subtask 1.3.1 Identify Technically Viable LNG Terminal Options

The Stanley Project Team will identify alternative configurations for LNG import terminals. These solutions will be screened to a shortlist of 3 to 5 that are considered likely to be optimal for the given site and scale of the terminal. The key variables when selecting a potential terminal configuration will include:

- Throughput – the scale of the terminal has a significant impact on the configuration selected
- Distance from shore – often dictated by water depth or proximity to populated areas or industrial areas
- Storage scheme – may be floating storage, onshore storage, or a combination of the two
- Regasification scheme – may be floating, platform-based or onshore
- Exposure – the configuration must allow for sufficient uptime for transfers and must also provide survivability in extreme weather events
- Transfer from LNGC – the transfer from the delivery carrier can be to an FSRU, FSU or to an onshore storage tank. Options to consider include ship-to-ship transfer, cross-dock transfer, loading arms, cryogenic aerial hoses and cryogenic floating hoses
- Transfer to shore – for an FSRU, which sends gas to shore, the alternatives include subsea pipeline, trestle-mounted piping or floating hoses. When storage is onshore, the alternatives typically include trestle-mounted cryogenic piping and floating hoses

The Team will identify technically viable terminal configurations alternatives by working on the following steps:

Review Available Site Data/Data Gap Analysis

All available site data provided by GPA will be reviewed to extract pertinent information to support the work on this task. Port operations and adjacent usage data regarding the current and future planned operations at the potential site for the terminal will be sought from the Navy and relevant port authorities. No field work or data collection is proposed for this task.
After reviewing all the data collected from GPA, any data gaps will be identified that are needed to complete this task.

Preliminary Hydrographic Analysis

The Team assumes that available hydrographic data at the site will be insufficient to develop return interval (extreme) and operational (day-to-day) statistics for design purposes. However, a preliminary assessment of the hydrographic conditions will be developed for the potential terminal site based on the site data collected in the previous step and, if necessary, high-level numerical flow and wave models. The preliminary assessment provides qualified estimates of design and operational conditions for currents, water levels and locally generated waves. In addition, a qualitative assessment of the potential impacts of tsunamis on the site will be included.

Prepare Preliminary Basis of Design

A Preliminary Basis of Design ("BOD") will be developed, adding sufficient detail to cover the site and terminal options analysis. The document will consist of a Concept of Operations, Functional Requirements Definition and the Preliminary BOD as described below. The BOD is typically a "living document" evolving as the project progresses up to issuing the bidding documents when the design basis for the preferred option will be finalized with the concurrence of GPA. The development of the design basis will include the following activities:

- Define Concept of Operations: The Concept of Operations will be developed in consultation with GPA, and will include a high-level overview of the purpose/objectives of the project and how the LNG facilities are expected to operate in detail sufficient to define the Terminal's functional requirements.
- Functional Requirements: The Functional Requirements flow from the Concept of Operations and provide a high-level summary of the functional aspects that must be incorporated into the design. The Functional Requirements will be defined based on the Concept of Operations.
- Preliminary Basis of Design: The Preliminary BOD will be prepared to outline the criteria required to guide the initial engineering effort for the terminal option analysis.

Conceptual Configuration/Layout Development

The Team will develop up to four (4) options at each of the three (3) potential sites to investigate. The configuration for each site will consider the following variables:

- Water depth available (with or without dredging)
- River sedimentation, if applicable, could affect minimum water depths
- Exclusion zones and safety distances
- Proximity to populated areas and existing facilities that could be impacted
- Navigation and vessel maneuvering
- Hydrographic conditions, including wind, waves & currents under both operational and extreme design conditions
- Mooring system
- Transfer of LNG from the LNG carrier to the terminal
- Transfer of LNG and/or high pressure gas to shore via trestle, subsea pipeline, floating pipeline or shuttle barge/carrier
- Location of regasification – either onshore or on vessel
- Available shore access and property considerations
- Onshore pipeline route to power plant
- Impact on seabed and shorelines (mangroves, seagrass, etc.)

Conceptual configuration/layout sketches will be prepared for each of the alternatives and sites.

Subtask 1.3.2 Develop Cost Estimates for Selected Solutions

A conceptual design, including parametric cost estimates for CAPEX and OPEX, will be prepared for the 3-5 selected options. The conceptual designs will include the most significant items anticipated to have the most influence on project costs. In addition, a preliminary assessment of the anticipated performance of each alternative will be prepared. Preliminary deck elevations will be established for the significant structures, considering the tidal range, sea-level rise over the project's design life, and the storm surge wave run-up. In addition, the designs will also consider the construction equipment and resources anticipated to be available in the regional market.
The cost estimates will include the following:

- Marine infrastructure: mooring (including options analysis and identification of optimal mooring solution based on reducing cost and minimizing downtime), berthing facilities, including any required platforms and mooring systems, loading platforms and access trestles, etc.
- Subsea pipeline (hydraulic/sizing calculations by others), riser, PLEM, and shore crossing (if needed)
- Foreshore infrastructure, including earthwork, access, and parking
- Topside marine equipment (transfer systems, gangways, QRHS, fender, berthing aids, etc.)
- Dredging requirements, as applicable to the Technical Options
- Navigation aids (if needed)
- Operations and maintenance costs for the marine infrastructure

Preliminary quotations from suppliers will be used and compared to COWI's recently developed, proprietary cost estimation tool to prepare cost estimates.
The Stanley Project Team will calculate the levelized cost of gas ($/MMbtu) of each alternative using the CAPEX, OPEX and ex-ship LNG price estimated as part of this task. The levelized cost will be presented with a breakdown for each component. To calculate the levelized cost of gas, the Stanley Team will develop an economic analysis model

Subtask 1.3.3 Develop Implementation Schedule

The Stanley Project Team will develop an indicative schedule for each option to estimate the total time required from the date this study is completed to first gas. This schedule will assume that the project will be developed under a Public-Private Parentship (PPP) structure. This schedule will include procurement and selection of the LNG infrastructure developer, capital raising and financial close, Front End Engineering Design (FEED), and procurement, construction and commissioning.

Subtask 1.3.4 Conduct Comparative Analysis

This Task will prepare a matrix that compares all the options across the criteria agreed with GPA. The matrix will present the levelized cost of gas ($/MMBtu) for each alternative, as well as the months to first gas and a qualitative assessment of permitting and technical risks. It will also show the total capital investment and the breakdown of this investment.

Task 2: Business Model Analysis

The objectives of this task are to (i) review relevant business models (including the underlying contracting options) for the proposed LNG terminal, (ii) compare such business model options, (iii) recommend an optimal business model considering the project's characteristics and GPA's capabilities and preferences, (iv) develop project implementaiton plan and detailed project implemnetation schedule based for the preferred business model approved by GPA, and (v) develop project finanical model and perform sensitivity runs.
The business models to be considered in this task will include EPC and various PPP models (e.g. BOO, BOOT, BOT, BTO).

Subtask 2.1 Identify Business Model

To effectively identify and subsequently evaluate the business model options, the Stanley Project Team will perform the following work:

- With GPA identify any legal constraints to LNG terminal's implementation (and if there are any, advise on how to address them),

Identify relevant business model options that may be considered valid and viable.

Identify Legal Constraints

The Stanley Project Team will work with GPA's legal advisor to review relevant laws and regulations and their impact on the LNG terminal. This will include a review and analysis of the following legal and regulatory aspects:

- Constraints arising under applicable company law, foreign investment law, land law, environmental law, planning and construction law and securities law
- Constraints arising under the fiscal regime relevant to the LNG terminal (in particular, taxation, import duties and exchange control issues)
- Legislation of relevance to the gas supply and transport or other legislation that is likely to have a bearing on the LNG terminal
- Site ownership and availability issues including land claims, servitudes, land leases and other legal constraints
- Legal and practical requirements related to supply and transport contracts, off-take contracts, construction and engineering contracts, corporate organization documents, shareholder agreements and other LNG Supply Project documents.

Identify Business Model Options

To develop business model options, the Stanley Project Team, in consultation with GPA, will:

- Identify critical project risks that, based on our experience, could impact the evaluation of the business model options
- Assess the nature of those risks and how they might be allocated to ensure bankability
- Conduct industry outreach as described in detail in Task 5
- Consider GPA's capacity to manage and monitor the implementation of the LNG terminal once operational
- Consider GPA's and other stakeholder preferences, precedents and familiarity.

Subtask 2.2 Compare Business Model Options

This Task will develop an initial set of evaluation criteria designed to compare the benefits and drawbacks of the various business model options. These initial criteria will be presented to GPA along with descriptions and justifications.

The Task will conduct a comparative evaluation of the shortlisted business model options based on the evaluation criteria established. This evaluation will incorporate a multi-stakeholder perspective. This Task will develop and use a financial model and incorporate results into the evaluation. The Task will evaluate and rank business model options against the criteria considering the results of financial modeling, the industry outreach conducted in Task 5, and an experience-based assessment.

For the Preferred Business Model, the Stanley Project Team will develop a financial model to perform financial and economic analysis and sensitivity runs to determine the estimated price of gas delivered to GPA. The inputs to the model will include the estimated LNG terminal CAPEX and OPEX, LNG ex-ship price, project capital structure (debt and equity contributions), interest rates, project implementation schedule, estimated project life, and assumed target return on equity investments. The model will estimate the price of gas to be paid by GPA. The Stanley Project Team will run a series of sensitivities for different variables to determine their impact on the price of gas. The model will be used as a tool for GPA to determine the possible range of gas prices and their impact on the cost of electricity.

Based on the evaluations an initial recommendation of the most beneficial business model will be made. This initial recommendation and the option ranking will be communicated in writing to GPA for review along with a summary description and a comprehensive explanation of the reasoning for the recommendation. The Team will present the recommended business model option to GPA. Once an option is selected the following task will proceed based on the Preferred Business Model.

Task 3: Industry Outreach

The Team will organize consultation discussions with potential LNG market participants including, but not limited to LNG terminal developers, EPC contractors, operators, as well as equity investors and lenders. The conclusions drawn from these consultation meetings shall be considered in evaluating the business models described in Task 4.
The methodology for conducting the industry outreach will include the following steps:

- Develop an industry outreach approach and present to GPA via teleconference or videoconference for approval
- Prepare an industry outreach document including an overview of the LNG terminal project (scope, division of responsibilities, prospective procurement modalities, and prospective project structure/s), description of the industry outreach process, a list of questions to be responded to by the relevant stakeholders, indicative project schedule and the process for face to face sessions
- Identify a list of companies that will be consulted. Obtain GPA's approval on this list
- Reach out to a list of companies in the list, sending them a copy of the outreach document, and inviting them to a virtual meeting
- Prepare an industry outreach report with summaries of each meeting and main findings relative to the LNG terminal

Task 4: Environmental, Cultural and Construction Permits Survey

This Task assumes that obtaining the permits required for implementing the LNG infrastructure project will be the responsibility of the selected BOT company. From the risk allocation perspective, it would be desirable for GPA not to take responsibility for obtaining any permits or performing any surveys required for obtaining environmental, cultural and construction permits. However, considering that selecting the BOT company may take up to 18 months, it could be beneficial for GPA to carry out some of the required surveys in parallel with the LNG infrastructure procurement process. This process could start as soon as GPA decides on a site for locating the LNG infrastructure. The pros and cons of GPA taking responsibility for conducting environmental, cultural and contraction permit surveys and assist GPA in deciding on this issue will be discussed.

GPA may decide to conduct a topographic survey of the selected site and perform a preliminary geotechnical survey. These surveys would serve as inputs to the functional technical specification to be included in the bidding documents. Bathymetric information is likely available for developing the functional designs of marine works.

The Team will assist GPA in developing the topographical and preliminary geotechnical surveys of the selected sites using local Guam subcontractors.

The Team will also compile a list of potential federal and local Guam permits that could be required for the LNG infrastructure project. This list will be included in the bidding document for the BOT

company's information. The following table presents the list of the permit that have been assumed to be required for the project:

	Lead Agency	Permit(s) / Review(s) / Approval(s)
Federal	NOAA-National Marine Fisheries Service	ESA and Marine Mammal Protection Act (MMPA)
	USFWS	ESA and Migratory Bird Treaty Act
	USACE	CWA, Sections 402 and 404
	USEPA	CWA
	USDA-Wildlife Services	Invasive and non-native animal interdiction
Guam	Guam Land Use Commission (GLUC)	Wetlands Permit
	GLUC/Guam Seashore Protection Commission	Seashore Clearance Permit
	Guam DPW	Flood Hazard Permit
		Clearing and Grading Permit
		Building Permit
		Construction Permit
	Bureau of Statistics and Plans	Coastal Zone Consistency Determination
	Guam EPA	Environmental Land Use Permit
		Environmental Protection Plan
		Environmental Impact Assessment
		Environmental Impact Study
		Erosion Control Permit
		Aquifer Protection Review
		Spill Prevention Control and Countermeasure Plan
	Guam Department of Parks and Recreation Historic Resources Division	Historic Preservation Determination

Figure 2 - Preliminary List of Permits

Task 5: Project Execution Plan and Work Breakdown Structure Development

For the Preferred Business Model, the Team will develop a project implementation plan. The likely steps to be included in the Plan will include the following:

- Development of the pre-qualification document
- Bidder pre-qualification
- Development of the RFP document
- Competitive bidding and selection of the preferred bidder
- Negotiations of project agreement
- Permitting
- Financial closing

- LNG infrastructure construction.

An estimate of the duration of each of the project implementation steps will be developed for reference which will identify the activities that can be implemented in parallels and determine the target gas delivery date.

Task 6: PUC Regulatory Support
The Stanley Project Team will provide GPA with support in obtaining the PUC approval of the LNG project during the phases of the Project implementation. It is expected that one of the items that will need to be submitted to PUC is the estimated price of gas and resulting electricity cost to GPA customers. The financial model developed by the Stanley Project Team will provide necessary data to be used by GPA for this purpose.

Task 7: Regulatory and Stakeholder Outreach Support
The Team will assist GPA to identify the regulatory agencies and project stakeholders, determining their roles during the project planning and implementation, and developing the regulatory and stakeholder outreach plan. As the next step, the Team will work with the GPA staff to assist GPA in the outreach plan implementation. The activities would include developing necessary presentation materials, documents, assisting in logistics, and other items that may be requested by GPA.

PHASE 2 - LNG INFRASTRUCTURE PROCUREMENT

For this scope of work it has been assumed that the LNG infrastructure will be implemented using a BOT contract procured via international competitive bidding. Procurement support of the BOT will include the following activities:

- Proponent Outreach
- Bidder prequalification process
- Draft bidding documents
- Draft BOT and other project agreements, as applicable
- Bidding, evaluation and award support
- Assist during negotiations with the selected bidder

The methodology that we will use in each of these tasks is described below

Task 8: Proponent Outreach

Proponent outreach work will be an ongoing process rather than a discrete task. We will continue contacting the prospective bidders and lenders identified during Task 5 to get their additional feedback on the transaction structure. The Team will conduct meetings before the start of the official procurement process to get their feedback on any adjustments to the transaction structure based on the latest decisions made by GPA. The results of those discussions will be summarized in periodic memos submitted to GPA. The findings will be discussed with GPA, and necessary adjustments to the project structure and draft tender documents will be made, as required.

Task 9: Bidder Pre-qualification Process

The Team will assist GPA in prequalifying bidders. This assistance includes drafting a request for qualifications (RFQ) and support for project advertisement, launching the prequalification process, and prequalifying prospective bidders. The RFQ document will be used to prequalify bidders

interested in the project and who meet the required technical and financial requirements. The Stanley Project Team will work with GPA to prepare a RFQ and the prequalification evaluation criteria.

In conjunction with GPA, the Stanley Project Team will also draft the advertisement for issuance by GPA announcing the RFQ. The Team will identify publications where GPA can place advertisements to reach qualified bidders. The Team will also develop a list of firms that we believe are qualified and interested and will send a copy of the advertisement to them.

With GPA's endorsement, the Stanley Project Team will distribute the RFQ to firms that have responded to the advertisement. The Team will be available to assist in providing clarifications, if needed, to prospective bidders during the response period.

The Stanley Project Team will review the statements of qualifications received and assess them against the criterion agreed with GPA. The Team will then prepare a report for GPA with the evaluation results and a recommendation on which firms to prequalify.

Task 10: Prepare Draft Bidding Documents

The Team will prepare an Invitation for Bid (IFB) document. The technical section will be a functional specification for the LNG infrastructure that will cover the project components. Including marine infrastructure, onshore storage and regasification, LNG truck or ship-loading facilities required for LNG transshipment, and a gas pipeline connecting the regasification facilities to the gas pipeline that is being built as part of the Ukudu IPP. The specification will set the output parameters of the project, project interfaces and applicable technical and environmental standards, but not prescribing specific design of different systems and equipment, thus leaving more flexibility to the bidders to come up with the most cost-effective technical solutions.

Details of the submission requirements will include the bidder's technical information on proposed EPC and O&M contractors and equipment datasheets, project implementation plan, financing capability and a project financing plan.

Subtask 10.1 Prepare IFB

The Stanley Project Team will develop the draft IFB document, will submit it to GPA for review and approval. The Stanley Project Team expects that GPA will engage a separate legal advisor to advise them on the BOT procurement legal aspects. The Stanley Project Team will communicate with the legal advisors during the development process of the IFB document. Upon obtaining the necessary approvals from GPA, the Stanley Project Team will proceed with preparing the final IFB.

Subtask 10.2 Prepare Draft Project Agreements

This scope of work assumes that GPA will engage an international legal counsel with experience in LNG to Power transactions for drafting the necessary agreements to implement the transaction. Under this Task the Team will provide technical and commercial inputs to the draft agreements, which will be included in the IFB documents as attacnments. In case GPA decides to undertake LNG supply resonsibilities, the major agreements would include Terminal Use Agreement (TUA) between GPA and the LNG infrastructure developer and LNG Sales and Purchase Agreement (SPA) between GPA and LNG supplier. In case GPA decides to allocate both the LNG infrastructure and LNG supply responsibility to the BOT company, the major agreements could be limited to a single Gas Supply Agrrement (GSA) between GPA and the BOT company. Depending on the site land acquisition, the document package may also include Land Lease Agreement (LLA) and other agreements depending

on the business model selected for the project. There will also be a set of direct agreements assigning the developer's rights to the project lenders.

Working with GPA's legal counsel the Team will develop draft agreements. Upon completing the GPA review and obtaining their approval, the Stanley Project Team will prepare the final IFB.

Subtask 10.3 Develop Evaluation Criteria

A two-envelope proposal evaluation process will be used for bid evaluation. The technical proposal (Envelope 1) is evaluated first, and the financial proposal (Envelope 2) is evaluated only for the bids meeting the technical proposal evaluation criteria. An evaluation criteria will be developed as part of this Task. The Team will design the evaluation criteria based on the project structure and the IPP modality selected for the project.

Task 11: Bidding, Evaluation and Award

At GPA's direction, the Stanley Project Team will distribute the RFP documents to the pre-qualified bidders. All issuance activities will be coordinated with GPA. Only pre-qualified firms will be invited to submit detailed proposals. This Task includes the following sub-tasks:

- Subtask 11.1 Bid preparation period
- Subtask 11.2 Proposal receipt and technical envelope opening
- Subtask 11.3 Envelope I Opening and Evaluation
- Subtask 11.4 Envelope II opening and Evaluation

Subtask 11.1 Bid Preparation Period (Q&A, Pre-bid Meeting)

IFB Questions and Clarifications

The Team will manage, respond and track clarifications and inquiries from the bidders. The Team will issue required addenda to the bidders. Any addenda or changes will be coordinated with GPA.

Site Visit

Each bidder will have the opportunity to make one site visit during the bid period. The Team will arrange and invite the bidders to attend a pre-bid conference on the project with a subsequent site visit. The Team will participate in the conference, including preparing and distributing documentation associated with the meeting to the bidders. All activities for this effort will be coordinated with GPA.

Subtask 11.2 Technical Proposal Receipt, Opening, and Evaluation

The Team will make arrangements for the receipt of proposals bidders. The proposals will arrive at GPA's and Stanley's offices under an arrangement to be clarified by both parties. Proposals will be kept confidential, with access by GPA's personnel assigned to the project.
Bidders' representatives who are present at that session shall sign a register as evidence of their attendance.

At the Envelope I of the proposal opening, GPA will examine proposals to determine whether the requisite proposal securities have been furnished and whether the documents have been properly signed. Failure to meet this requirement will be cause for immediate rejection of a bid.

With the opening of the Envelopes, the Team and GPA will evaluate the proposals on a pass-fail basis. The evaluation team will determine whether each proposal is substantially responsive to the requirements of the RFP. The technical evaluation will include reviewing all technical data requested by

the IFB including equipment component technical data, performance characteristics and drawings. Particular focus will be placed on technical guarantees and representations, including:

- Contracted LNG infrastructure LNG processing capacity and regasification gas output over the life of the project.
- Guaranteed gas quality, including composition and heating value
- Completeness of the data and conformance to Functional Specifications,
- Experience and qualifications of the bidder's proposed team,
- The experience and qualifications of the proposed EPC contractor(s) in the performance of work of similar complexity
- The experience of the bidder's leading equipment suppliers and the satisfactory performance record of the proposed technology.
- The bidder's proposed project organization and staffing plan for both offshore and onshore project activities, including overall project
- Management, engineering, procurement construction management and supervision, commissioning, safety, planning and scheduling functions and accounting and commercial activities.
- The experience of the bidder's nominated O&M company.
- The schedule evaluation for completeness and demonstration of knowledge of the work to be done.

In addition to technical items, the Stanley Project Team will evaluate Envelope I for certain non-technical items such as:

- Any changes since Prequalification of the bidder's constitution or legal status
- The bidder's proposed financing plan focuses on the debt-equity ratio, the minimum debt service coverage ratio, the evidence of positive financial commitments or underwritings from reputable financial institutions, and evidence of adequate interest rate protection (hedging) and tariff charges based on fixed interest rates.

Upon completing the technical and responsiveness evaluation, the Stanley Project Team will draft the recommendation to GPA. The recommendation will include documentation regarding responsiveness.

Subtask 11.3 Price Proposal Opening and Evaluation

Once the final list of bidders deemed to be substantially responsive has been determined with GPA the Envelope II will be opened in stage 2. Usually, this is performed in an open forum where all bidders are invited to witness the opening of the prices.

Envelope II Evaluation

As part of the Envelope II evaluation team, the Stanley Project Team will provide its input during the following activities:

- Envelope II Proposals will be compared to determine the lowest-priced proposal. The proposals will be ranked from the lowest to highest on the basis of the proposed selected evaluation criteria. Proposals will be checked for any arithmetic errors in computation and summation.
- During the examination, evaluation and comparison of the Envelope II Proposals, the need may arise to ask the bidders to clarify their price proposals. The Stanley Project Team will assist GPA in issuing clarifications and will assist in evaluating bidder responses. (No change in the price or the proposal's substance shall be sought, offered or permitted through such clarifications.)

- Upon completing the validation checks and clarifications in this evaluation phase, a proposal offering the lowest tariff shall be deemed the most advantageous proposal. It will be ranked as the First-Ranked Bidder.

Upon completing its price evaluation, the Team will advise GPA on its final recommendation and prepare a Bid Evaluation and Recommendation Report.

Project Award Process

The Team will provide support during the project award process. Once the first-ranked bidder is selected and notified, GPA will inform the unsuccessful bidders of the results; however, the second- and third-ranked developers will be requested to stand by with their bid security if the negotiations with the first-ranked developer prove unsuccessful.

Task 12: LNG Infrastructure Contract Negotiations

Once GPA approves the ranking of bidders based on the Bid Evaluation Report, the highest-ranked bidder will be invited for a clarification meeting to clarify his proposal and have preliminary discussions on the open issues and exceptions taken to the project agreements. After completing the clarification meeting the Team will summarize the results and the preferred bidder may be invited to negotiations.

Once the key terms of the BOT Agreement have been negotiated so that the essential risk evaluation and assignment have been accomplished and the basic project deal structure has been completed, negotiations of other project agreements will proceed.

The Team will analyze exceptions taken by the preferred bidder to the Draft Project Agreements and develop a matrix listing exceptions, change in the risk allocation associated with each exception, and recommendations for GPA consideration.

The Team will prepare negotiation sessions on technical and commercial issues. GPA is expected to engage a separate legal team to lead the negotiations on legal issues, to preside over the negotiation meetings with the selected bidder, to coordinate drafting new revisions to the documents (if necessary), and distribute those revisions to GPA and the bidder for review and comment before the next meeting.

After completing the final round of negotiation meetings, the Team will assist in redrafting the project agreements, as appropriate, based on the final agreed-upon modifications.

The Team will prepare a report summarizing the negotiations.

Task 13: Fuel Contract and Procurement for Fuel Supply

The EPCM RFP specifies the requirement for the EPCM to "develop the fuel contract and procurement for fuel supply". The Team understands that this refers to the LNG ex-ship supply contract and that GPA will continue to procure ULSD using their current USLD procurement practices. The LNG ex-ship SPA will depend on the selected business model. Depending on the model chosen the activities performed by the Team and included in this proposal would include the following: Design a procurement process that: i) meets GPA's procurement rules, ii) maximizes competition, and iii) fits well with the timeline of the other components of the LNG infrastructure

development and power plant project. The approach to procure LNG ex-ship will be similar to the approach described above for procuring the LNG infrastructure.

The procurement process would include the prequalification and the bidding stage. The proposals at the bidding stage would be based on a two-envelope system. The Stanley Project Team would develop the Request for Prequalification (RFQ) document, the IFB document and draft LNG ex-ship SPA. As part of the bidder outreach process described above, the Stanley Project Team will contact LNG suppliers to understand their interest in supplying LNG to Guam, potential sources of supply, and the level of flexibility in LNG deliveries that could be tolerated by the suppliers and the impact on the LNG price.

The Stanley Project Team will then support GPA during all the stages of the bidding process, including:

- Development of the RFQ document and RFQ submittal evaluation
- Development of the IFB document, including draft SPA and proposal evaluation
- Assisting during negotiations with selected LNG supplier.

After completing the final round of negotiation meetings, the Stanley Project Team will redraft the LNG SPA, as appropriate, based on the final agreed-upon modifications. the Stanley Project Team will also prepare a report summarizing the negotiations.

PHASE 3 - LNG INFRASTRUCTURE IMPLEMENTATION

After GPA signs with BOT Agreement or GSA with the selected BOT developer, the Team will assist GPA during the project implementation phase performing the following activities:

- Engineering Support for Design and Construction Phase
- Project Management
- Post-Construction and Commissioning Support
- Regulatory and Stakeholder Outreach Support

Task 14: Engineering Support During Construction Phase

After signing the BOT Agreement, the BOT company will proceed with the project implementation. The implementation period will include:

- Pre-financial closing period, when the BOT company would work on obtaining the project permits, signing agreements with their service providers and, possibly, other Guam entities, undergo the lenders' due diligence review, and
- Post financial period including LNG infrastructure construction, testing and commissioning.

The Stanley Project Team will provide engineering support to GPA during both of these phases.

The engineering support activities will include responding to questions from the BOT company and their lenders related to permitting interfaces and other technical issues. During the post financial closing period, the Stanley Project Team's services will include a review of design documentation and technical specifications for major equipment developed by the BOT company and their contractors for compliance with the functional technical specification included in the BOT Agreement. The Team will conduct periodic site visits to monitor the construction activities and verify that they are performed with proper quality control and using materials and processes established on BOT technical specification requirements and good utility practices.

Support provided during this phase will be high level and limited as it is assumed that the BOT firm will use an Owner's Engineer for detailed review of the devleopment by an EPC sub contractor.

Task 15: Project Management, Post-Construction, and Regulatory Outreach Support

The Stanley Project Team will manage the BOT Agreement between the GPA and the BOT company. The activities will include monitoring the project schedule during pre-financial closing and construction and commissioning periods, conducting weekly progress calls, and evaluating change orders and changes in commercial terms of the BOT contract that the BOT company or their lenders could request and performing other project and contract management activities. The Stanley Project Team will develop an agenda and meeting minutes for each progress call with the BOT or internal calls between the GPA and the Stanley Project Team. During the testing and commissioning period, the Stanley Project Team will review the results of the guarantee tests, assess BOT company's compliance with the schedule guarantees and any associated liquidated damages, and review and evaluate any BOT company's claims against GPA.

PHASE 4 - LNG/CNG TRANSHIPMENT

As stated in the RFP document, GPA is considering using the LNG infrastructure for other than GPA's needs. These could include LNG bunkering, regional LNG or CNG supply, or local Guam domestic supply. The Stanley Project Team understands that the term "LNG Infrastructure Contractor" means the BOT company selected for developing, owning and operating the LNG terminal in Guam.

As part of the terminal pre-development activities and industry outreach, the Stanley Project Team will analyze the feasibility of using the LNG terminal in Guam for bunkering, regional LNG of CNG supply, and local Guam domestic supply. Based on the results of this analysis, the Stanley Project Team would estimate additional LNG quantities that could be required to cover the transshipment needs and include the transshipment option in the bidding documents issued to the LNG infrastructure bidders. Specifically, the activities related to the LNG/CNG transshipment options will include the following tasks.

Task 16: Assess Potential LNG Demand for Bunkering and Regional Transshipment

The Stanley Project Team will conduct market research and analysis and contact LNG suppliers in the region to determine a potential market for using LNG storage located in Guam for bunkering or regional transshipment. Depending on the results of this analysis, the Stanley Project Team may include additional requirements related to LNG infrastructure design requirements and include an option for the BOT company operating the LNG terminal to use their facilities for bunkering and regional transshipment.

Task 17: Assess Potential LNG/Natural Gas Demand in Guam by Other Industrial/Commercial Users

Guam imported in 2019 refined petroleum products worth US$566 million—including USLD and jet fuel. Although most of the ULSD is used for power generation, commercial and industrial companies use USLD for their industrial processes. These companies could switch from USLD to LNG or natural gas to save costs and decarbonize their production processes.

The Stanley Project Team will gather fuel import data to understand the types and volumes of petroleum products imported to Guam and identify the largest consumers of these products. We expect to find that the majority of the diesel imports are used for power generation and transportation, but commercial and industrial companies also use a portion of these imports. The Stanley Project Team will attempt to collect this data from public sources. However, if this information is not readily available, the Team will try to work with fuel distribution companies in Guam to obtain this data, for example, Shell. This data will be used to estimate the LNG or natural gas volume that commercial and industrial businesses could demand if they replace USLD, LPG or heavy fuel oil with natural gas or LNG. This volume is the "Potential Demand".

After understanding the potential demand for LNG or natural gas, the Stanley Project Team will identify the companies ("Potential LNG Users") with the most significant consumption of USLD, LPG and HFO—outside GPA and transport companies. The Stanley Project Team will identify where these companies are located within Guam.

Task 18: Identify and Analyze On-island Transshipment and Distribution Options

The Stanley Project Team will identify technically viable options for transshipping LNG from the LNG import terminal and distributing LNG or natural gas to the Potential LNG Users. Transshipment could be from a FSU onto a smaller onshore storage tank that loads LNG trailers in a truck loading bay. In the case of onshore storage, the LNG could be loaded from the onshore storage tanks. The LNG trailers would deliver LNG to each Potential End User, who would have their LNG storage and regasification infrastructure. If the Potential LNG User is close to the LNG terminal, they could be supplied with gas via a pipeline.

The Stanley Project Team will develop Class 5 cost estimates for each LNG transshipment and distribution chain component and each technically viable option identified. The Stanley Project Team will also estimate the cost of converting the end user's equipment to use LNG or natural gas. These cost estimates will be used to calculate the levelized cost of gas or LNG delivered to each Potential End User. The Team will use this analysis to identify the least-cost LNG transshipment and distribution option.

Task 19: Analyze Business Case and Estimate Viable Demand

The Stanley Project Team will then compare each user's levelized cost of gas or LNG with the cost of the petroleum product they currently use. The Team will aggregate the demand of those end users who would see cost savings if they switch to natural gas or LNG ("Viable LNG Demand").

Task 20: Analyze and Implement Contracting/Procurement Options

The Stanley Team will then analyze viable contracting and procurement options for providing LNG transshipment and distribution services. These options would include various ownership arrangements, including:

- GPA selling LNG or gas ex-terminal to third parties who could then distribute to end-users
- GPA allowing third parties to use the LNG terminal to import LNG and charging these third parties a fee for using the terminal (equivalent to a franchise fee)
- GPA entering into a joint venture with a third party that will distribute and sell LNG or natural gas to end-users.

Under any of these or other ownership or contractual arrangements, it will be very important to ensure that selling LNG or natural gas to end-users in Guam does not compete with GPA's electricity services. If there is a competitive threat, GPA should be compensated adequately.

After developing a set of viable contracting and procurement options acceptable to GPA, the Stanley Team will engage with fuel suppliers in Guam to explore their interest in this service and solicit their feedback on these options. These companies already know the fuel distribution business in Guam, have relationships with end-users, and could be interested in the natural gas / LNG business if they see an upside or a threat to their current fuel distribution business. The Stanley Team will assist GPA in selecting the best contracting and procurement option for LNG/natural gas distribution and will work with GPA to select service providers or partners and negotiate the contracts that will govern the relationship with these companies.

Project Clarifications:

1) Hours and Cost developed off project duration reflected in GUP's summary schedule submitted on 09/15/2022.
2) Project duration is estimated at 36 months, Dec 2022 through Nov 2025.
3) Program Management hours were based on Program Manager being on-site.
4) Travel time associated with trips to Guam, GUP's office, or vendor offices have been included and will be invoiced.
5) Airfare, luggage fees, car rentals, parking fees, tolls, communication, reprographics, mail etc. will be reimbursed per contract.
6) On-site per diem is $8,700 per month (i.e. - $290/day) for long-term (excess of 30 days or longer) onsite personnel. The per diem rate will cover lodging, food, fuel, and rental vehicle.
7) Short term onsite personnel (less than 30 days) expenses will be expensed at $255/day for food and lodging per 2022 GSA rates. Transportation/incidentals will be expensed separately.
8) Company costs associated with business registrations, licensing, and tax filings specifically related to this project will be expensed.
9) Expenses (excluding per diem) will receive a 10% mark-up for administrative processing.
10) Included project costs include twenty-seven (27) trips to Guam for project support personnel.
11) Onsite PM will travel to the CONUS for one month every 6 months. Project will account for short term coverage while PM is offsite. Per diem will be continued to be charged while PM is offsite to cover long term housing and transportation commitments.
12) Sub-consultant costs will receive a 10% mark-up for administrative processing.
13) A Guam project tax of 5.263% has been included.
14) Fee for the services identified in the scope are estimated and actual costs may exceed the proposed amount. Should client not increase purchase order amounts accordingly, services could be suspended.
15) Interest will be applied to late payments as defined in the contract.
16) Demobilization charges shall be charged if contract is terminated prior to completion date.
17) Services identified above are performed under mutually agreeable terms and conditions.
18) Transmission Construction Support is by GPA, proposed services are for technical assistance only.
19) Project includes costs to utilize a tax equalization firm for long-term on-site personnel.
20) Project hourly rates provided are for only one year. The estimated project costs do include an assumed escalation of approximately 5% per year. Project hourly rates and per diem will need to be evaluated on a yearly basis due to current market volatility. Rates will be adjusted October 1st of each year and the projected project costs will be adjusted and reviewed with GPA.