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BEFORE THE GUAM PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:	) GPA DOCKET NO. 23-17
LIQUIFIED NATURAL GAS (LNG)	) **GUAM POWER AUTHORITY'S UPDATED PHASE I LIQUIFIED NATURAL GAS PRE-DEVELOPMENT STUDY**

COMES NOW, the GUAM POWER AUTHORITY ("GPA"), by and through its interim counsel of record, THERESA G. ROJAS, ESQ., and hereby files GPA's UPDATED Proposal for its Phase I Liquified Natural Gas (LNG) Pre-Development Study with scope and costs for PUC review and approval. The updated proposal is attached hereto as **EXHIBIT A**. GPA's initial proposal was filed on May 29, 2023 and the PUC's Administrative Law Judge prepared a draft Order and Report with concerns. The attached supplement and updated report now address the following:

a. Notes that renewable integration (new bids/RPS) will be considered in LNG projections;
b. Clarifies approval process in the overall LNG scope as Phase I focuses on providing a cost benefit analysis for LNG and evaluates options for fuel sourcing, infrastructure, and business models; and
c. Identifies PUC approval requirements.

The scope for other phases will not be entertained without additional PUC approval and Phase I is the only scope and cost that is being requested for approval at this time.

Based on the foregoing and the attached updated proposal, GPA now requests the PUC's approval for Phase I of GPA's LNG Pre-Development Study with Stanley Consultants for $1,720,00.00. This is a decrease from the $1,809,000.00 earlier requested in GPA's May 29, 2023, filing.

RESPECTFULLY SUBMITTED this 14th day of November 2023.

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

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September 8, 2023

Guam Power Authority
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Mangilao, Guam 96913

Attn: Jennifer Sablan

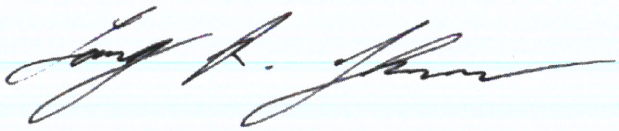
Subject: Updated LNG information for GPA Docket No 23-17.

Thank you for the opportunity to present Stanley Consultants' revised proposal to Guam Power Authority for the Phase 1: Cost-Benefit Analysis / Pre-development scope and pricing for LNG. The pricing is provided for Phase 1 only based on previous comments provided by PUC's ALJ. The Phase 1 LNG scope will be scheduled to commence once the project is awarded and is comprised of six tasks.

The scope of work is included below for the complete duration of the LNG project which made up of four phases. Phases 2 thru 4 are provided as reference to illustrate future scopes of work should LNG be deemed feasible in Phase 1 and if approved by GPA and the PUC.

Please contact me or Chuck Spooner if you have any questions.

Sincerely,



Larry Johnson
Vice President
Stanley Consultants, Inc.

johnsonlarry@stanleygroup.com

Attachments: Updated LNG Scope of Work and Price

EX-A-001

Stanley Consultants Revised Scope and Price for Phase 1 LNG

WORK GROUP 100: LNG PROJECT

WORK PACKAGE 101: PHASE 1: COST-BENEFIT ANALYSIS / PRE-DEVELOPMENT

Introduction

The Stanley Project Team understands that under the current terms of the Ukudu project ECA, GPA's capacity and energy payments shall increase if the Ukudu power plant does not switch from USLD to LNG (Liquefied Natural Gas) before the fifth anniversary of the IPP project's commercial operation date. Furthermore, LNG can potentially lower GPA's generation costs as the fuel component of the Ukudu power plant's electricity charge could be reduced. Confirming the economic benefits of developing the LNG infrastructure to bring LNG to Guam will be determined during Phase 1.

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 the transaction and procurement of LNG, COWI will provide LNG marine infrastructure technical expertise, and CH-IV will contribute LNG storage and processing engineering experience.

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: Cost-Benefit Analysis / 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 a project implementation plan. LNG project will only proceed to Phase 2 with CCU and PUC review and approval.

Phase 2: LNG Infrastructure Procurement

During this Phase, the Stanley Project Team will prepare the tender document and assist GPA in running a competitive bid process to develop the LNG infrastructure. In addition, the project team will assist GPA with bid 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 legal, regulatory, and commercial feasibility of LNG transshipment, including regional transshipment, LNG bunkering, and LNG or natural gas distribution to other customers in Guam.

The Stanley Project Team understands that GPA will require two GO/NO GO decision points before proceeding with the LNG infrastructure implementation:

- ***Decision point No.1: At the completion of Phase 1 the results of Phase 1 will be reviewed with GPA to determine if bringing LNG to Guam will result in a cost reduction to the cost of electricity generated by the Ukudu Power Plant.***

- ***Decision point No. 2: At the completion of Phase 2 the LNG prices proposed by the bidders as part of Phase 2, LNG Infrastructure Procurement, will be reviewed with GPA to determine if they result in lowering the cost of electricity generated by the Ukudu plant. Phase 2 will validate the inputs to the financial model from the Phase 1 study by soliciting pricing from qualified bidders.***

GPA will only proceed with Phase 2 of the LNG project if the results of the Phase 1 analysis demonstrate economic benefit to GPA, the ratepayers and PUC approves moving to Phase 2 of the LNG project development.

GPA will only proceed with LNG infrastructure contracting and implementation if the results of the financial evaluation of the LNG infrastructure and supply bids conducted as part of Phase 2 demonstrate that, based on actual prices proposed by the bidders, the LNG project will provide economic benefits to GPA, it's ratepayers and PUC approves GPA's entering into the LNG infrastructure and LNG supply contracts.

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

PHASE 1 COST-BENEFIT ANALYSIS AND PRE-DEVELOPMENT

The primary purpose of the LNG Cost-Benefit Analysis and Pre-Development phase is to estimate the cost of electricity generated by the Ukudu plant using LNG and compare it with the cost of electricity generated using ULSD to determine the economic benefit of switching to LNG. Since the logistics of LNG delivery to Guam and the capital and operating costs of the LNG infrastructure have major impacts on the total cost of natural gas delivered to the Ukudu plant and resulting electricity cost, the Phase 1 scope will require conducting significant LNG market, shipment options, and LNG infrastructure options analysis, which would allow to develop the necessary cost estimates to be used as input to the cost-benefit analysis.

Phase 1 will also answer the following strategic questions set in the IRP implementation strategy document of 2013.

1. Proceed with LNG or continue with current oil-based fuel (ULSD) for power generation?
2. What it the optimal LNG project structure?
3. How to proceed with the LNG infrastructure implementation?

Specifically, the major steps in performing Phase 1 will include the following:

- Evaluate LNG demand.
- Evaluate the possible LNG sources of supply.
- Evaluate LNG shipping options.

- Establish preliminary conceptual design of the LNG infrastructure for different site locations and storage and regasification options.
- Evaluate environmental and social impacts.
- Estimate LNG infrastructure capital and operating costs.
- Select an optimal business model.
- Develop a financial and economic model to compare different options using the results of previous steps as inputs. The model will include a sensitivity analysis.

During Phase 1, the Stanley Project Team will also assist GPA in consultations with Guam stakeholders, regulatory authorities, and the LNG industry.

If the Cost-Benefit analysis demonstrates that bringing LNG is beneficial, GPA, after approval by CCU and PUC, would proceed with performing Phase 2.

Figure 1 below presents the Phase 1 task diagram. The following sections provide a more detailed description of the Phase 1 tasks.

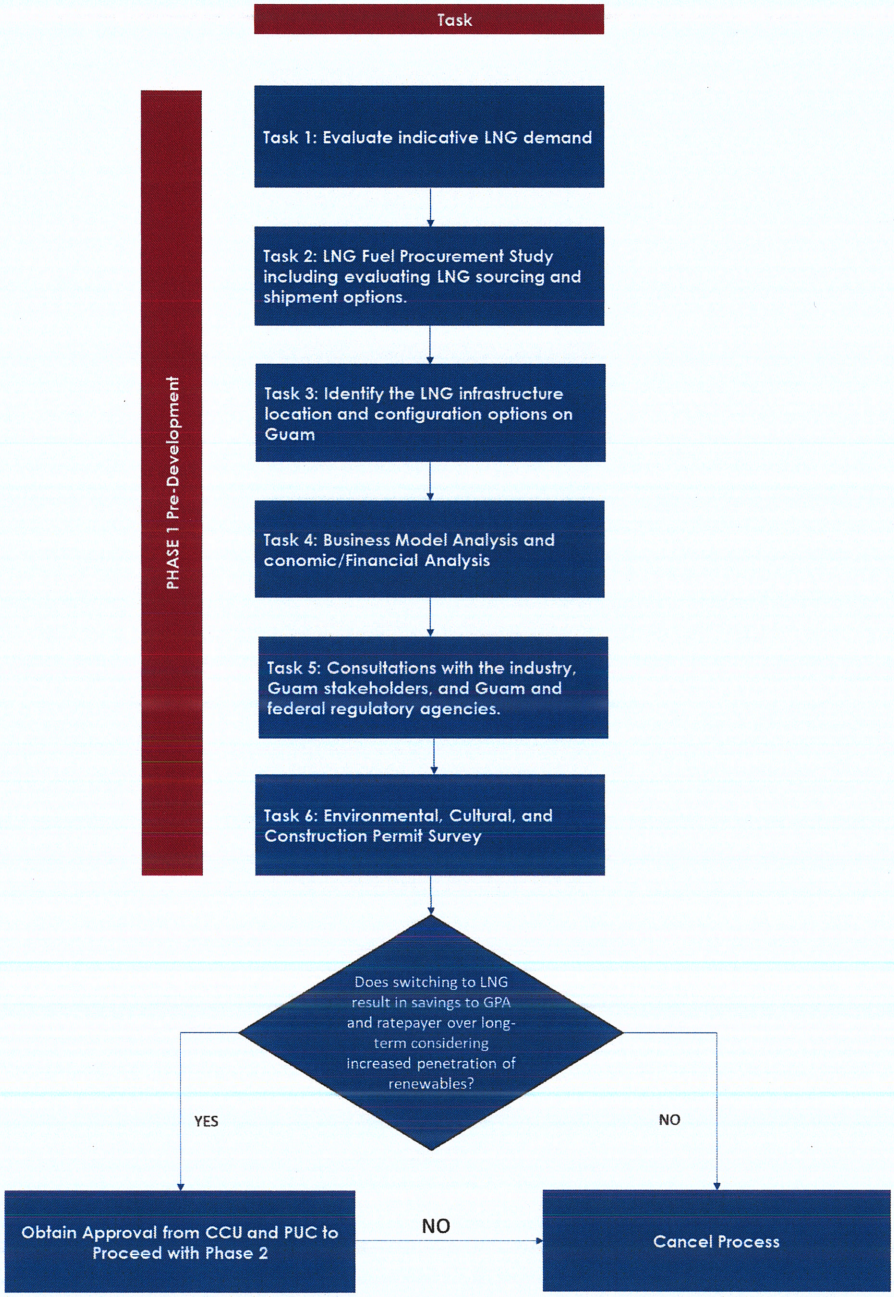


Figure 1 - Phase 1 Tasks Diagram

Task 1: Evaluate Indicative LNG Demand

This Task will establish the potential LNG demand. LNG demand will impact the type of LNG ship, terminal, and infrastructure and the cost of natural gas delivered to 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). The Ukudu plant dispatch analysis will consider the impact of the increase in renewable penetration set

forth by GPA's power system development strategy. With the assistance of GPA, the Stanley Project Team will also contact some of Guam's larger industrial and commercial consumers, 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 for the next 20 - 25 years to be used for further analysis of the LNG supply and infrastructure options as well as for the economic and financial analysis. The Team will work with GPA to evaluate the legal requirements for offselling natural gas.

Task 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 be 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.

Task 3 Identify the LNG Infrastructure and Location Options for Guam

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 while maintaining LNG's long-standing commitment to safety. The approach outlined herein seeks to take advantage of these innovative solutions. The Stanley Project Team will identify potential sites and configurations that facilitate permitting.
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 will also be weighed as part of this analysis.

Subtask 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 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 a 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 that are needed to complete this Task will be identified.

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 a vessel
- Available shore access and property considerations
- Onshore pipeline route to the 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 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 Project Team will develop an economic analysis model.

Subtask 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 the 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 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 4: Business Model Analysis and Economic/Financial 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 a Project implementation plan and detailed project implementation schedule based on the preferred business model approved by GPA, and
(v) develop project financial 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 4.1 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, that the Project is financeable
- 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 4.2 Compare Business Model Options Conduct Economic and Financial Analysis

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 consultations conducted in Task 5, and an experience-based assessment.

Subtask 4.3 Conduct Economic and Financial Analysis
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 electricity generated by the Ukudu plant and other relevant parameters. 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 annualized costs of LNG to GPA, the net present value (NPV) of these costs, the all-inclusive price of gas per MMBtu to be paid by GPA, and the cost of electricity generated by the Ukudu plant. The model will also compare the resulting costs with the NPV and the cost of electricity for the case if the Ukudu plant continues operating on ULSD. The Stanley Project Team will run a series of sensitivities for different variables to determine their impact on the price of gas and electricity. The model will be used as a tool for GPA to determine the possible range of natural gas prices and their impact on the cost of electricity.

Based on these 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 option to GPA. Once an option is selected, the subsequent work will proceed based on the Preferred Business Model.

Task 5: Consultations with Industry, Guam Stakeholders, and Guam and Federal Regulatory Authorities
The Stanley Project 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 consultations will include the following steps:

- Develop an industry consultation approach and present it to GPA via teleconference or videoconference for approval
- Prepare an industry consultation document including an overview of the LNG terminal project (scope, division of responsibilities, prospective procurement modalities, and prospective project structure/s), a description of the industry consultation 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 consultation document and inviting them to a virtual meeting
- Prepare an industry outreach report with summaries of each meeting and the main findings relative to the LNG terminal.

The Stanley Project Team will assist GPA in identifying the regulatory agencies and project stakeholders, determining their roles during the project planning and implementation, and developing the regulatory and stakeholder consultation plan. As the next step, the Team will work with the GPA staff to assist GPA in the consultation plan implementation. The activities would include developing necessary presentation materials, documents, assisting in logistics, and other items that may be requested by GPA.

Task 6: 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 and obtains PUC approval to proceed with Phase 2. The pros and cons of GPA taking responsibility for conducting environmental, cultural, and contraction permit surveys and assisting GPA in deciding on this issue will be discussed as part of this task.

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 preliminary list of the permit that has 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

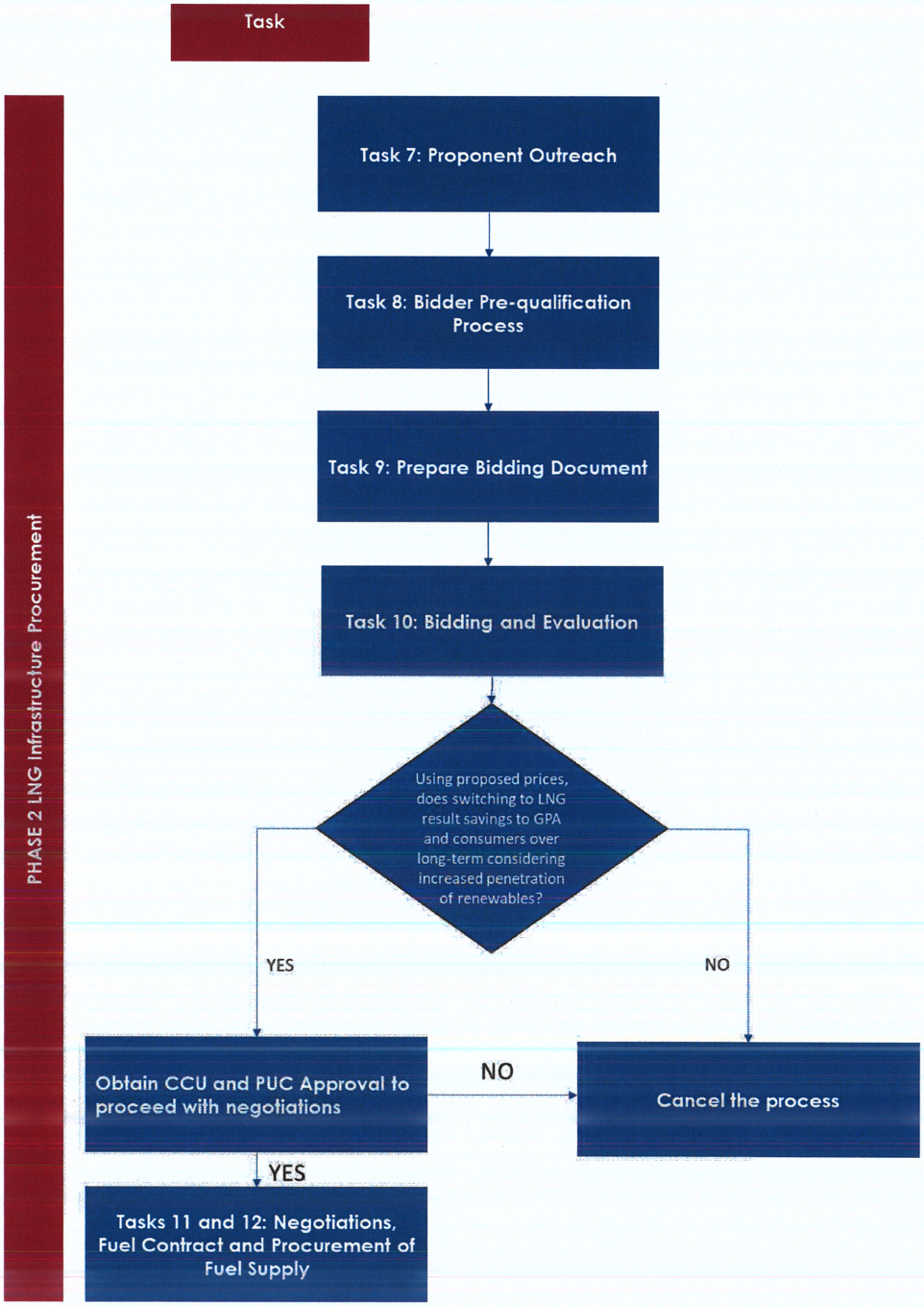
Figure 2 - Preliminary List of Permits

GO-NO GO POINT NO.1: DECISION TO PROCEED WITH PHASE 2

THE STANLEY PROJECT TEAM WILL PREPARE A REPORT SUMMARIZING THE RESULTS OF PHASE 1 AND PRESENT THEM TO GPA. IF THE RESULTS OF PHASE 1 SHOW THAT IMPLEMENTING THE LNG PROJECT IS EXPECTED TO RESULT IN ECONOMIC BENEFITS TO GPA AND RATE PAYERS, GPA WOULD SEEK THE CCU AND PUC APPROVAL FOR PROCEEDING WITH PHASE 2 AND WILL ONLY PROCEED WITH THE NEXT PHASE AFTER OBTAINING SUCH APPROVALS.

PHASE 2 - LNG INFRASTRUCTURE PROCUREMENT

After GPA obtains the PUC approval to proceed, the Stanley Project Team will start working on Phase 2 of the Project. The Phase 2 task diagram is presented on Figure 2 below:



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 7: 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 8: Bidder Prequalification 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 an 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 9: 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 prescribe specific designs of different systems and equipment, thus leaving more flexibility to the bidders to come up with the most cost-effective technical solutions.

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 conducting the topographical and preliminary geotechnical surveys of the selected sites using local Guam subcontractors.

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 9.1 Prepare IFB

The Stanley Project Team will develop the draft IFB document and 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 9.2 Prepare Draft Project Agreements

Under this task, the Team will provide technical and commercial inputs to the draft agreements, which will be included in the IFB documents as attachments. If GPA decides to undertake LNG supply responsibilities, 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 Agreement (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 9.3 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. 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 10: Bidding, Evaluation, and Award

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

- Subtask 10.1 Bid preparation period
- Subtask 10.2 Proposal receipt and technical envelope opening
- Subtask 10.3 Envelope I opening and evaluation
- Subtask 10.4 Envelope II opening and evaluation.

Subtask 10.1 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 the 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 10.2 Technical Proposal Receipt, Opening, and Evaluation

The Team will make arrangements for the receipt of proposals from bidders. The bids 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 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 the 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 10.3 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.

The proposed pricing will also be used to update the financial model developed in Phase 1 to confirm that bringing LNG is still economically beneficial to GPA and the ratepayers.

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

GO-NO GO POINT NO.2: DECISION TO PROCEED AWARD AND NEGOTIATIONS

The results of the bid evaluation, and especially the financial evaluation, will be presented to the GPA management, CCU, and PUC. For GPA to proceed with the Project award and negotiations with the First Ranked Bidder, the results of the financial proposal evaluation will have to demonstrate that developing the LNG infrastructure and bringing LNG to Guam provides economic benefits to GPA and ratepayers. GPA will present the results of the bid evaluation to PUC and will only proceed with the project award and negotiations with the First-Ranked Bidder after obtaining the PUC approval. Otherwise, the procurement process will be canceled at this stage.

Project Award Process

Upon obtaining the PUC approval to proceed with award and negotiations, the Stanley Project 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 11: 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, changes 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, preside over the negotiation meetings with the selected bidder, 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. It is expected that up to three negotiation sessions will be required.

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 12: 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 Sales ad Purchase Agreement (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 consist of designing 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 consultation 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 the selected LNG supplier.

It is expected that up to three negotiation sessions will be required.

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 results of 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 by performing the following activities:

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

Task 13: 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 14: 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, 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 "LNG Infrastructure Contractor" means the BOT company selected for developing, owning, and operating the LNG terminal in Guam.

With assistance from the GPA legal counsel and in consultations with the Guam regulatory authorities, the Stanley Project Team will determine whether GPA can engage in LNG sale for bunkering or local Guam domestic supply from the legal and regulatory points of view. If confirmed, the Stanley Team will analyze the feasibility of using the LNG terminal in Guam for bunkering, regional LNG of CNG supply, and local Guam domestic supply during Phase 2. Based on the results of this analysis, the Stanley 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.

The specific tasks to be performed by the Stanley Project Team in case an LNG sale is possible from the legal and regulatory point of view will include the following:

Task 15: 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 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 16: 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 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 17: 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 an 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 18: Analyze the 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 Project 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 sell LNG or gas ex-terminal to third parties who could then distribute to end-users.
- GPA allows third parties to use the LNG terminal to import LNG and charges these third parties a fee for using the terminal (equivalent to a franchise fee).
- GPA enters 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 Project 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 Project 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) Travel time associated with trips to Guam, GPA's office, or vendor offices have been estimated and will be invoiced.
2) Airfare, luggage fees, car rentals, parking fees, tolls, communication, reprographics, mail etc. will be reimbursed per contract.
3) Short term onsite personnel (less than 30 days) expenses will be expensed at $283/day for food and lodging per 2023 GSA rates. Transportation/incidentals will be expensed separately.
4) Expenses (excluding per diem) will receive a 10% mark-up for administrative processing.
5) Sub-consultant costs will receive a 10% mark-up for administrative processing.
6) A Guam project tax of 5.263% has been included.
7) 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.
8) Interest will be applied to late payments as defined in the contract.
9) Services identified above are performed under mutually agreeable terms and conditions.
10) Project hourly rates provided are for only one year. The project hourly rates and per diem will be evaluated and adjusted on October 1st on a yearly basis. Labor and Per Diem will be adjusted by referencing Producer Price Index (PPI) for Engineering Services (NAICS #541330-P) by the U.S. Bureau of Labor Statistics (bls.gov) and GSA/DOD for Per Diem. The revised project costs will be reviewed with GPA.

Estimated LNG Phase 1 Project Cost: $1,720,000