



Terms of Reference for 6 MW Temporary Power Supply in St Kitts

October 2022

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1. Background

SKELEC intends to contract a supplier for temporary power supply, who will provide all necessary equipment, materials, designs and labour services for the temporary installation, operation and maintenance of a diesel-based power generation plant to supply 6 MW, 11kV, 60 Hz of continuous power to SKELEC electricity network for a period - with a minimum of six months. Fuel, lube oil and process water as well as the necessary interconnection infrastructure will be provided by SKELEC.

The present Terms of Reference (ToR) describe the scope, responsibilities, and quality requirements for the requested power supply services. The offered services shall meet all requirements outlined in these ToR.

2. Description of Project Site and Envisaged Scope

2.1. General Scope

The contractor shall perform all professional services as necessary to provide SKELEC with 6 MW of continuous power at 11kV, 60 Hz, excluding supply of fuel and lube oil, for the defined contract period as outlined in these ToR. The table below shows the required design parameters for the envisaged power supply:

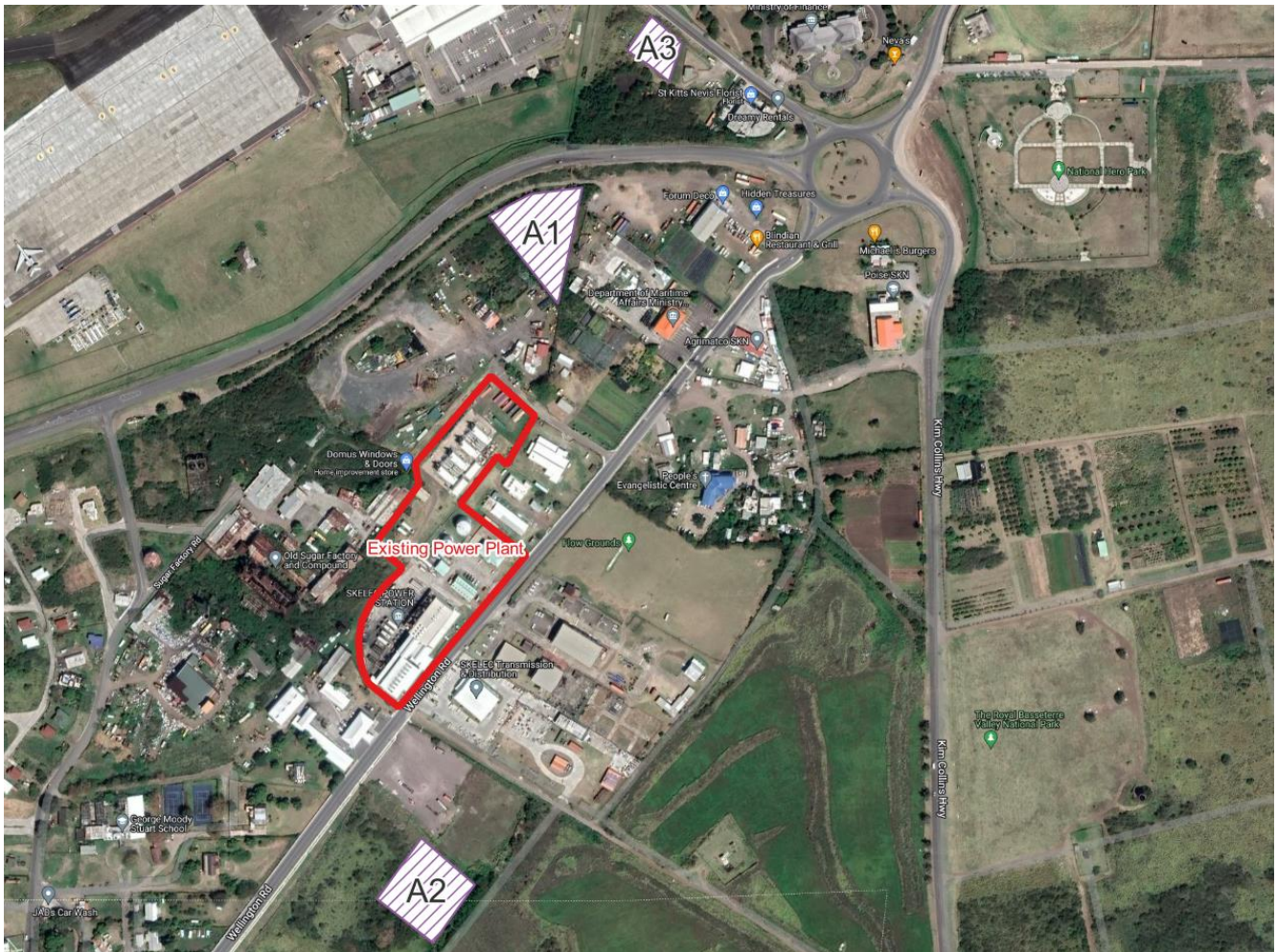
Parameter	Value
Power Capacity	6.0 MW
Rating	continuous
Availability	96%
Operating Configuration	Grid connected (infinite bus)
Application	Grid support on a continuous basis
Running hours	in average 12 h/day, up to 24h per day
Estimated monthly power supply	1,620 MWh
Voltage	11 kV
Voltage Stability Range	± 5%
Frequency	60 Hz
Frequency Stability Range	± 5%
System Power Factor	0.8 pf
System Fault Level	5,000 Amps

The contractor shall deliver and install the power plant such that it is operational and compliant with all applicable standards, and SKELEC's grid and interconnection requirements. The bidder shall include respective specifications and datasheets in the technical proposal.

2.2. Location and Site Conditions

The emergency power plant shall be installed in the Needsmust area, Basseterre, St. Kitts. The site will be facilitated and prepared by SKELEC as outlined under section 3.2 and will include laydown areas, generator platform, concrete works (plinths, foundation) and drainage.

The specific site coordinates are: 17.3091916, -62.7135067. The map below shows the envisaged possible locations for the power plant:



The relevant site conditions for power supply will be as follows:

- Altitude: around 30 meters above sea level
- Max. Ambient Temperature: 40 °C
- Min. Ambient Temperature: 26° C
- Max. Relative Humidity: 80%
- Min. Relative Humidity: 50 %

2.3. Quality Requirements

2.3.1. Performance Criteria

The power plant shall fulfil the following minimum efficiency and performance criteria:

Criteria	Value
Fuel Consumption	264 litres/MWh ¹ (17.22 kWh/imp gal) or a minimum thermal efficiency of 37.39 %
Lube Oil Consumption	up to 6 litres/MWh
Auxiliary Power Consumption	60 kVA at 400V or 440V, 3 Phase
Water Consumption	Up to 2,500 litres/month

All of the above given values refer to an operation at 100% load and a bus bar voltage of 11kV (60Hz) with one start/stop per day at 35°C ambient temperature at the indicated site, measured at the point of grid connection.

2.3.2. Emissions

The contractor shall ensure, that the power generation plant will meet the following emission standards.

Criteria	Value
Noise Level	max. 95 dBA at a 50 feet perimeter around the generation facility
NOx	max. 16.75 g/kWh
Particulate Matter	max. 0.2 g/kWh
CO	max. 3.59 g/kWh
HC – Unburnt Hydrocarbons	max. 0.4 g/kWh

3. Scope of Services

The Project pricing shall be based on the obligations, allocation of responsibility and performance criteria set out below. All associated costs to the respective scope shall be for the responsible party's account.

The contractor's obligations and responsibilities shall include the services and deliveries as described in the following sub-sections. All obligations shall be performed in accordance with the Project Schedule, defined under section 4 and reviewed prior to contract closure. The responsible party shall be liable for any delay to the Project Schedule caused by a failure/delay in performing an obligation, and any costs associated with such delay shall be for the responsible party's account.

3.1. Transport, Customs Clearance (Import/Export) and Offloading/Loading

Scope (Obligations and Responsibilities)	Responsible Party
International transport (outward and return) of all plant, materials, and equipment (including spares and consumables) for the Power Plant from the contractor's depot to St. Kitts Sea port; and from St. Kitts Sea port to the contractor's depot, including freight/transport charges, Free Onboard (FOB) costs and transit	Contractor

¹ All values calculated using fuel with a lower heating value (LHV) / net calorific value (NCV) energy content of 42,700 kJ/kg and a density of 0.854 kg/litre

insurance costs	
In-country transport (outward and return) of all plant, materials, and equipment (including spares and consumables) for the Power Plant from St. Kitts port to Project Site and from Project Site to St. Kitts port, including freight/transport charges, handling/lifting charges at port/border point and transit insurance costs)	Contractor*
Pre-Shipment Inspection of all plant, materials, and equipment (including spares and consumables) for the Power Plant	Contractor
Customs and transit clearance of all plant, materials, and equipment (including spares and consumables) for the Power Plant inwards and outwards of St. Kitts & Nevis	SKELEC
Import and export permits, licenses and/or exemptions (as applicable) for all plant, materials, and equipment (including spares and consumables) for the Power Plant at St. Kitts Sea port	SKELEC
Offloading (delivery) / loading (return) of all plant, materials, and equipment (including spares and consumables) for the Power Plant at the Site	Contractor*

*With assistance from SKELEC

Any demurrage and/or storage charges incurred due to a failure/delay in performing an obligation shall be for the responsible party's account.

3.2. Site, Site Preparation and Civil Works

Scope (Obligations and Responsibilities)	Responsible Party
Provision of Site for the Power Plant for <ul style="list-style-type: none"> Lay down and installation of the Power Plant and related infrastructure for operation Connection of the Power Plant to the grid's point of common coupling Connection of the Power Plant to the fuel supply connection point Road access for heavy duty transport between public highway and the site 	SKELEC ²
Site preparation and civil works for the installation, commissioning and operation of the Power Station (including laydown areas, generator platform, concrete works (plinths and foundations) and drainage)	SKELEC
Site Perimeter Lighting, Fencing and Earthing	SKELEC
Site survey and inspection	SKELEC/Contractor

3.3. LV, HV and EHV Installation

Scope (Obligations and Responsibilities)	Responsible Party
Auxiliary LV Power Supply	SKELEC
Black start capacity and power supply	Contractor
HV (<24kV) cable connection, termination and testing	Contractor
EHV (>24kV) cable connection, termination and testing	SKELEC
Installation of 2 Electrical Connection points suitably protected and rated for voltage, frequency and power offtake (incl. electrical back-feed) within 50 m of the Power Plant	SKELEC

3.4. Fuel and Fuel System

Scope (Obligations and Responsibilities)	Responsible Party
Fuel Supply according to the fuel specifications provided in the annex to these ToR	SKELEC
Fuel Storage	Contractor
Fuel Metering	SKELEC

² The bidder/contractor will indicate the land area size required for the proposed Power Plant as well as any further site requirements within the technical proposal.

3.5. Installation, Operation and Maintenance of the Power Plant

Scope (Obligations and Responsibilities)	Responsible Party
Installation, Commissioning, Operation and Removal of Power Plant	Contractor
Quality and Performance Testing of installed Power Plant	Contractor
Remote monitoring and access of all relevant parameters for secure and efficient plant operation	Contractor
Routine maintenance and 'A' Servicing incl. labour, spare parts and all necessary materials	Contractor
Overhauls and 'B' Servicing incl. labour, spare parts and all necessary materials	Contractor
Lube Oil Storage, Supply and Sampling	Contractor
Process Water Storage	Contractor
Process Water Supply	SKELEC
Disposal of Waste Oil and Consumables	SKELEC

3.6. Site Security and Facilities

Scope (Obligations and Responsibilities)	Responsible Party
Site Security Control and First Aid Facility, including 24/7 available Personnel, Welfare and Office Facilities for Security and Contractor's personnel	Contractor
Site Workshop Facilities	Contractor
Site communication (Internet and Telephone line)	Contractor

3.7. Insurance

Scope (Obligations and Responsibilities)	Responsible Party
Equipment Insurance to cover full replacement value of the Power Plant	Contractor
Public and Product Liability (Third Party Liability) Insurance to be effected with limit of indemnity of US\$10,000,000.00	Contractor
Employer's liability / workers' compensation insurance for Contractor's personnel	Contractor

3.8. Contractor's Personnel

Scope (Obligations and Responsibilities)	Responsible Party
Local skilled labour for power plant operation and maintenance	Contractor
Travel cost including all necessary flights, in-country transport, accommodation and allowances, meals and drinking water	Contractor
Meeting respective requirements for visa/work permit for contractor's personnel in St. Kitts & Nevis	Contractor
Support to facilitate visa/work permit for contractor's personnel	SKELEC

3.9. Licenses and Permits for Power Plant Installation and Operation

SKELEC will ensure that all necessary licenses, permits, and consents required for the installation, commissioning, operation, maintenance and removal of the Power Plant will be obtained. The contractor will provide all necessary information and designs regarding the installation and operation of the power plant, including but not exclusively those related to operational safety, fire protection, environmental impacts, and plant emissions, prior to the shipping of the equipment.

4. Project Schedule

The contracted services shall be implemented based on the following Project schedule.

Services	Due Date (weeks after contract closure)
Plant design and preparation of shipping documents	0 - 2
Shipping of necessary equipment and materials	2 - 4
Site survey, inspection and testing	2 - 5
Installation of Power Plant	5 - 6
Quality and performance testing of installed Power Plant	6 - 7
Commissioning of Power Plant	7 - 8
Operation of Power Plant	8 – 32 (end date TBD)
Removal of Power Plant	Within 2 weeks after defined end of operation

The Project schedule will be subject to review upon bidder selection prior to contract awarding.

5. Quality and Performance Acceptance

The Power Plant and its components will be checked regarding completion and functionality by SKELEC. SKELEC may also demand that some components undergo a performance test, based on guaranteed performance data, as a precondition for the complete system quality and performance test.

Upon finalization of equipment installation and as part of the plant commissioning, the contractor will conduct a quality and performance test on all quality requirements outlined under sections 2.3.1 and 2.3.2 of these ToR under the supervision of SKELEC. The results will be documented in respective templates to be signed by both parties.

6. Bidder Qualification Requirements

6.1. Company requirements

The Tender will be limited to firms or a consortium of firms that comply with the following minimum requirements:

- Minimum 10 reference projects for the successful installation and operation of temporary grid power supply worldwide, out of which
 - minimum 5 projects realized in the Caribbean region
 - minimum 5 projects realized with a total capacity > 1 MW
- Average annual company turnover > 10,000,000 USD
- Permanent availability of minimum one representative for services and support in the Caribbean region

6.2. Team requirements

The proposed Project team of the contractor shall fulfil the following or equivalent qualifications to comply with the qualification requirements as indicated below:

- Minimum 5 years of documented experience in the installation and operation of diesel or fuel oil-based power plants for temporary power supply to public electricity grids and networks
- A proven track record of minimum 3 projects related to the installation and operation of diesel or fuel oil-based power plants for temporary power supply to public electricity grids and networks
- Minimum academic requirement for at least one team member of a Bachelor's degree or equivalent in electrical, process or mechanical engineering
- Licensed Electrician as per applicable regulation in St. Kitts & Nevis or the team member's home country

The interested bidder will be allowed to propose a team of technicians to fulfil the aforementioned requirements.

7. Proposal Preparation Requirements

The interested bidder is requested to submit a bid comprising a technical and a financial proposal according to the instructions given in the following sub-chapters.

The technical and the financial proposals are to be submitted electronically and in separate documents. There shall be no indication of a unit or a total price in the technical proposal. Both proposals are requested to be signed and stamped by the bidder.

The technical proposal must be submitted by **November 5th**, 2022, 11:59 pm AST via email to: cjwilliams@skelec.kn

The financial proposal must be submitted by **November 5th**, 2022, 11:59 pm AST via email to: cjwilliams@skelec.kn

Further questions and requests for clarification related to these ToR and the procurement process can be addressed via email to: jkelly@skelec.kn

Further requirements and provisions:

- The bidder shall bear all costs associated with the preparation and submission of its proposal and the finalisation and execution of the engineering, procurement, and construction agreement. SKELEC shall in no circumstances be responsible or liable for these costs, regardless of the conduct or outcome of the RFP process. Documents submitted by the Bidders shall not be returned.
- Bidders shall carefully examine the RFP to understand fully the content of the Project including the amounts, and the difficulties and restrictions affecting the execution and completion of the Project. bidders shall be liable to any failure or negligence to obtain reliable and necessary information for successful execution or completion of the Project.
- Each bidder is invited to conduct one site visit of the proposed location and its surroundings, buildings, electrical and other supporting infrastructure, to obtain and verify for itself, at own responsibility and expenses, all information necessary for the preparation of its proposal, by requesting an appointment in writing minimum three days in advance to SKELEC via email to: jkelly@skelec.kn
- In addition, interested bidders will be provided with the necessary design documents for the select site and its surrounding electrical infrastructure once eligibility for the RFP has been evaluated and confirmed by SKELEC against written proof (see section 6.1).

- The bidder commits to not disclosing confidential information, neither before, during, nor after the delivery of the project. All technical design documents and all communication (emails, letters, phone calls, messages) and RFP documents are considered as confidential information.
- The proposals shall be signed by a person or persons duly authorized to sign on behalf of the Bidder.
- Reasonable changes of the scope during the implementation will be agreed to in writing in advance, between the contractor and SKELEC.
- The technical and financial proposals will be evaluated using a weighted score of 40/60%. SKELEC is not obligated to award a contract to any bidder including the lowest bidder.

7.1. Technical Proposal

The technical proposal is required to show how the objectives defined in Sections 2 - 5 of these ToR are to be achieved. In addition, the bidder must demonstrate the company's capacity, expertise, and experience by providing a concept for quality assurance (company description), and respective references from similar assignments.

The Technical Proposal must be legible (font size 11 or larger) and clearly formulated. The bid must be written in English (language).

The complete technical bid shall not exceed 50 pages (excluding CVs and datasheets) and shall include minimum:

- Technical concept, description and specification of installation scope and major equipment to be used including datasheets and certificates related to the quality requirements outlined under section 2.3
- The land area size required for the proposed Power Plant
- Company Description (incl. overview of staff/team concept, officials of the company, organisational structure, business activities, quality assurance)
- Registration Certificate and Financial statements for past three years
- Project references related to section 6.1, indicating Name of Client, Project size and scope, Location and Year
- Personnel qualification related to section 6.2, including CV and certificates

7.2. Financial Proposal

The financial proposal shall be based exactly on the cost breakdown as described in section 7.2.1. The specifications for pricing are defined in the price schedule.

7.2.1. Cost Breakdown

The cost breakdown of the financial proposal shall be provided as follows:

Charge	Amount	Unit	Price in USD
Capacity Charge	6	MW/month	
Energy Charge	1	MWh net ³	
Transportation Charge	1	Lumpsum for outward and return transport	

³ MWh net refers to the total of net energy generated (gross energy generated – auxiliary energy)

All duties, taxes, levies and other charges that are due in accordance with the laws, rules and regulations of St. Kitts & Nevis arising out of the performance of this Contract or the income derived there-from will be the responsibility of and for the account of SKELEC in relation to the importation, exportation and use of the Power Plant, equipment, tools, spare parts, consumables, and testing and monitoring equipment, whether imposed before, during or after the termination of the Contract.

7.2.2. Payment

The payment for the temporary power supply will be as follows:

- ✓ 50% of transportation charge - upon contract signature
- ✓ Capacity charge – monthly, at the beginning of each month of operation upon successful performance testing and commissioning of the power plant
- ✓ Energy charge – monthly, based on metered energy supply at the end of each month of operation
- ✓ 50% of transportation charge - upon end of agreed period for power supply