الشروط العامة

- وصف العمل:-

تتضمن اعمال المشروع على توريد وتركيب وتوصيل وفحص وتشغيل وتجريب مولد كهرباء احتياطي لمبنى وزار السياحة والاثار وحسب المواصفات الفنية المحددة لاحقا ويشمل العمل كذلك توريد وتركيب مفتاح التحويل التلقائي (ATS) كما تشمل كافة اعمال الحفر وتمديد الكيبل والاسلاك من المولد الى مفتاح التحويل التلقائي (ATS) ولغاية لوحة القواطع الرئيسية داخل المبنى وعمل كل ما يلزم حسب الاصول وتعليمات المهندس المشرف علما بأن مبنى وزارة السياحة والاثار مخدوم بالطاقة الشمسية وعلى المناقص اخذ كافة الاجراءات والاحتياطات اللازمة والتنسيق مع الشركة المنفذة لمشروع الطاقة الشمسية وعلى حسابه الخاص.

- إعداد وتقديم العروض:-

1- يعد المناقص عرضه وفقا لوثائق الشراء بعد ان يدرس هذه الوثائق ويتفهم جميع ماورد فيها واذا كانت الوثائق غير كاملة او غير واضحة او وجد نقصا فيها فعلى المناقص طلب استيضاح او الوثيقة الناقصة من الجهة المشترية قبل الموعد المحدد في وثائق العطاء ويتحمل المناقص النتائج المترتبة على عدم قيامه بالتحقق من استلام وثائق العطاء كاملة.

2- يعد المناقص عرضه واسعاره على الجداول والنماذج المرفقة بوثائق العطاء والتي تتفق مع متطلبات وثائق العطاء ويختم ويوقع كافة وثائق العطاء ويقدمها ضمن العرض كاملة ويحق للمناقص بالاضافة الى وثائق العطاء ان يضيف اي وثائق او معلومات يرغب في اضافتها ويرى انها ضرورية.

3- تقدم العروض المالية والفنية بمغلف واحد مغلق وترفق بهما كفالة دخول العطاء ويكتب عليه إسم ورقم دعوة العطاء.

4- يودع العرض من قبل المناقص في صندوق العطاءات لدى الجهة التي طرحت العطاء قبل انتهاء المدة المحددة لذلك ويفضل ان يودع قبل اخر موعد بفترة كافية تجنبا لاي طارئ وكل عرض لا يودع في صندوق العطاءات قبل اخر موعد لتقديم العروض لا ينظر فيه ويعاد الى

مصدره مغلقا وفي حالة عدم كتابة عنوان المناقص او المعلومات الكافية الواضحة عن العطاء فيحق للجنة المشتريات فتحه لمعرفة محتويات المغلف والعنوان ان وجد لاعادته.

5- على المناقص ان يرفق بعرضه اي كتالوجات او نشرات او معلومات فنية او احصاءات تعرف باللوازم المعروضة باحدى اللغتين العربية او الانجليزية مختومة بختم المناقص مع تدوين رقم العطاء عليها وبخلاف ذلك للجنة المشتريات استبعاد العرض ولا يحق للمناقص الاعتراض على ذلك.

6- يلتزم المناقص ان يبقى العرض المقدم منه نافذ المفعول وغير جائز الرجوع عنه لمدة لا تقل عن 90 يوما اعتبارا من اخر موعد لايداع العروض واذا لم يتم ذكر مدة صلاحية العرض في وثائق الشراء تعتبر حكما 90 يوما.

7- على المناقص ان يبين في العرض لفني المقدم منه بلد المنشأ للوازم المعروضة واسم الشركة الصانعة واسم الشركة المصدرة ومنشأها والماركة والاسم التجاري والطراز (Model) ورقم الكتالوج او النشرة الخاصة باللوازم المعروضة.

8- يضمن المناقص ان تكون المواد واللوازم الموردة جديدة 100% (Brand new) خالية من اي عيوب في الصنع او في المادة.

9- على المناقص ان يبين في العرض مدة كفالة الصيانة لمدة سنتان.

10- يتم إيداع العروض بموعد أقصاه الساعة الثانية عشرة ظهرا من يوم الاحد الموافق (2020/07/12).

11- تطبق احكام نظام المشتريات الحكومية رقم (28) لسنة 2019 وعلى المناقص ان يكون على دراية تامة بأحكام النظام.

12- ينبغي على من يرغب الاشتراك في هذه المناقصة أن يقوم بزيارة موقع العمل ، وأن يتعرف عليه وأن يحصل بنفسه وعلى مسؤوليته ونفقته الخاصة ، على جميع المعلومات اللازمة له لتقديم العرض، وأن يتفهم ماهيتها والظروف المحيطة بالمشروع وظروف العمل، وكل الأمور الأخرى التي لها علاقة بالمناقصة ، أو تلك التي تؤثر على وضع أسعار عرضه.

13- لا يجوز إدخال أي تعديل على وثائق العطاء من قبل المناقص ، وإذا أجرى المناقص أي تعديل، أو أخلّ بأي من هذه التعليمات ، فإنّ ذلك يؤدي إلى رفض عرضه .

14- أما إذا أراد المناقص تقديم عرض بديل ، فإنّ باستطاعته أن يقدم ذلك في مذكرة خاصة منفصلة ترفق بالعرض ، شريطة أن يتقدم بالعرض الأصيل كما هو مطلوب ، وللجنة العطاءات المختصة أن تنظر في عرضه البديل أو ترفضه

- الوثائق المطلوبة :-

1- يلتزم المناقص بتقديم شهادة سجل تجاري سارية المفعول مع العرض المقدم.

2- يلتزم المناقص بتقديم رخصة مهن سارية المفعول مع العرض المقدم.

- الكفالات المطلوبة:-

1- تقديم كفالة دخول عطاء بقيمة (3%) من قيمة العطاء على شكل كفالة بنكية أو شيك مصدق بإسم معالي وزير السياحة والآثار بالإضافة الى وظيفته سارية المفعول لمدة لاتقل عن 90 يوما.

2- يلتزم المناقص الذي يرسو عليه العطاء تقديم كفالة صيانة بقيمة (3%) من قيمة اللوازم المكفولة لمدة سنتان.

3- يلتزم المناقص الذي يرسو عليه العطاء بتقديم ضمانة خطية من سوء المصنعية مصدقة من كاتب العدل وبكامل قيمة اللوازم المضمونة مضافا اليها (15%) خمس عشرة بالمئة من قيمتها ولمدة خمس سنوات.

- التسليم:

1- أن يكون التسليم والتركيب في مبنى وزارة السياحة والاثار.

2- أن لا تتجاوز مدة التوريد والتركيب والتسليم النهائي عن (60) ستون يوما من تاريخ امر المباشرة.

3- تحسب غرامة التأخير 50 دينار عن كل يوم بما لايتجاوز (15%) من قيمة العقد.

- رسوم الاعلان على من يرسو عليه العطاء مهما تكرر.

المواصفات الفنية

GENERATING SET AND AUTOMATIC

TRANSFER SWITCH

PART 1- MATERIALS

1.01 GENERATING SET

A. The generating set shall be of the automatic mains failure type using a proved and reliable known make of diesel engine and alternator (USA, EUPOPE or JAPAN) The manufacturer of the generating set shall also be manufacturer of either the Canopy and (ATS)

B. The generating set supplier shall be the authorized distributor of such equipment, maintaining a local staff of specialists for engineering assistance, installations and maintenance of the generating equipment's.

C. The emergency generating set Are skid mounted with (200-220KVA) Prime Power Rating

Works shall include the following:

1. Engine generator set as contained in this section.
2. Electrical Power & control wires from the generator to the ATS and to the main distribution board

1.02 ENGINE

A. The engine shall be diesel; water-cooled, of the naturally aspirated, turbo-charged or charged cooled version, four strokes, and direct injection.

B. Lubrication shall be full pressure by gear type pump with full flow filters with replaceable elements. An oil temperature stabilizer, strainer and a relief valve shall be fitted.

C. Fuel injection shall be enclosed in-line fuel injection pump or pumps with diaphragm type fuel lift pump. Full flow filters with replaceable elements shall be fitted and 24 volts fuel solenoid provided.

D. Governor shall be electronic type .frequency regulation shall not exceed +/-1%

E. Starting shall be automatic electric starting type by an axial type starter motor from a 12 or 24 volts lead acid battery. On mains failure sets the starter motor shall automatically disengage when the engine fires. Battery charging by charge alternator and regulator unit. A mains operated trickle charger shall be supplied on mains failure sets.

F. Engine instruments shall comprise an oil pressure gauge, water temperature gauge, an hours counter and a battery charge ammeter.

G. A length of flexible exhaust pipe shall be supplied connected to the exhaust manifold. Silencers and exhaust system shall be included in the installation costs.

H. Dry type air filters shall be fitted.

1.03 COUPLING SYSTEM

A. Shall be a system of Unit Construction which forms the engine and generator into one unit of exceptional strength and ensures perfect alignment.

B. The generator end shield and the engine flywheel housing faces shall be fully machined with spigots concentric to their shafts. The machined flange mounted alternator shall be connected to the flywheel housing by steel bolts.

C. A flexible rubber block coupling shall be fitted between the engine and generator to provide the drive and absorb the transmission of shock loads. The torsion flexibility, shall be designed to match the torsion characteristics of the system to prevent resonant conditions.

1.04 ALTERNATOR

A. Shall be brush-less, salient pole, revolving field self-regenerating alternator.

B. The alternator shall be of fabricated steel construction throughout with ball and roller bearings, a dynamically balanced rotating field, salient pole construction with heavy damper windings. The machine shall have an A.C. exciter and liberally rated silicon diode assembly with a self-contained excitation system using with transistorized automatic voltage regulator (A.V.R.) and an efficient cooling system using a centrifugal fan. It shall be screen protected and drip proof with a large terminal box for outgoing cable connections.

C. Current peaks associated with starting of squirrel cage motor shall be acceptable and the A.V.R. system shall minimize the effect on the line voltage. A compounding circuit consisting of current transformer and rectifier shall be provided.

D. The A.V.R. and control gear shall be mounted in a component box on the side of the machine using anti-vibration mountings; electrical connections to the A.V.R. shall all be taken through a multi-way plug and socket. All components in the AVR are to be non-encapsulated.

E. Alternator rotor insulation shall be to Class F.B.S. 2757. Standard insulation on other windings to Class E . All windings shall be fully impregnated for tropical climates with high quality oil resistant varnish.

F. Voltage regulation shall be within +/-2.5 V under all conditions of load, power factor and temperature including cold to hot variation.

G. Voltage drift shall be negligible. Suppression on radio or television interference. Line voltage waveform shall be approximately 2% total harmonic content. Temperature rise and performance to be in accordance with B.S.S. 2613 and machine to be suitable for an ambient temperature of **40o**. A quadrature droop circuit and damper windings to ensure stable operation and share loads correctly within normal tolerances shall be incorporated.

1.05 CONTROL CUBICLE

A. The control cubicle shall be free standing or resiliently mounted on the main frame of the generating set.

B. The free standing control cubicle shall be of fabricated zinc coated sheet steel folded construction incorporating a lockable instrument and control panel mounted on the top from section and arranged to withdraw on runners for maintenance and inspection. The rear, side and lower front panels shall be detachable for installation and maintenance purposes. Control cubicles shall be finished in enamel paint.

C. The set mounted control cubicle shall be fabricated in Zinc coated sheet steel with a full height hinged panel face allowing full access to all components. The cubicle shall have lockable door handle.

D. Where engine instruments are fitted, these shall be mounted on a separate engine sub-panel on the set. The D.C. control circuit, battery charring fuses and charge regulator shall be incorporated in the plant wiring terminal box.

E. All plant wiring shall be in flexible PVC or PCP impervious to the action of water, fuel and lubricating oil. Interconnecting wiring throughout the set shall be encased in flexible reinforced PVC or metallic conduit.

F. Coded ferrules shall be fitted at the termination of each wire in the control cubicle.

The Control cubicle shall incorporate:

1 Voltmeter with six-position selector switch

1 hand voltage trimmer

1 Ammeter with four- position selector switch

3 Instrument current transformers

1 Frequency meter, clock and timer for weekly automatic test runs

2 4 pole mechanically and electrically interlocked contactors

1 Time delay controller (adjustable) for transfer of changeover switch control

3 Adjustable magnetic overload unit switch dashpot time delays.

3 Current transformers for the overload units

1 Overload indicator lamp.

1 Overload re-set push button.

3 HRC mains input fuses.

1 Set HRC fuses for A.C. instrument and control circuits.

1 Set mains and alternator available and on load indicator lamps.

1 Engine start push button.

1 Fuel on indicator lamp.

1 Automatic low oil pressure and high water temperature protection unit complete with individual indicator lamps.

1 Over speed protection

1 Over speed indicator lamp.

1 Fail to start circuit.

1 Fail to start indicator lamp.

1 Set of relays arranged to sense a total failure droop to approximately 60% of the voltage in any phase.

1 Set automatic mains failure equipment.

1 Monitoring unit suitable for operating on a rise in the alternator voltage and frequency.

The starting timer, monitoring unit and the relays shall be of the plug-in type.

1 Duty selector switches OFF/TEST/MANUAL/AUTO.

1 Mains operated trickle charger with mille-ammeter, switch and fuse.

1 Set of alternator, mains and load connections.

Or digital type control panel incorporating the above mentioned items.

G. The D.C. control circuit and engine driven battery charging equipment and fuses, regulator, ammeter, ...etc. shall be incorporated in the plant wiring terminal box, and sub-panel.

H. Under normal mains available conditions the load shall be fed via a 4-pole contactor. When the mains fail i.e. remain below and adjustable level setting 60%-90% from rated voltage) for an adjustable period of time (setting 0-60 seconds) this contactor shall be released and the plant started automatically. An adjustable time delay control (setting 0-5 minutes) shall be provided controlling the changeover contactors after rated voltage frequency are available on the generator. Changeover shall be possible both automatically and manually. The load is then to be fed from the generator via a second contactor until the mains are restored when the contactors shall revert to the main available condition and the plant shut down the transfer to normal mains shall be controlled via a time delay unit (0-30 minutes) adjustable.

I. Cubicle shall be manufactured by the same manufacturer of the engine and/or the alternator.

PART 2 - EXECUTION

2.01 BASE FRAME CONSTRUCTION

The combined engine-generator unit shall be bolted to a separate sub-frame which will be attached to a main-frame resilient mountings under the set will be installed on the concrete raised pad.

2.02 Outdoor Weather-Protective Sound Attenuating Enclosure

The generator set shall be provided with a factory-installed Sound attenuated enclosure with sub-base fuel tank.

The enclosure shall reduce the sound level of the generator set while operating at full rated load to less than 68dB at 7 meter from the set.

2.03 FUEL TANK

A. A set mounted fuel tank with sufficient fuel capacity for at least **8 hours** operation on full load shall be provided. The fuel tank shall be mounted on framework attached to the main frame of the generating set. A dial type fuel gauge, fuel filter inlet and outlet connections, drain plug and all feed and return fuel pipe connections shall be provided.

Tank Gauges

Provide as required a gauge to indicate level of fuel in the tank. Mounted on gauges shall also be a high/low level alarm switch. The switches and gauges shall be designed for a 240 Volt single phase, 50 Hz systems. Locate indicating gauges as deemed necessary.

2.04 LIFTING

The set shall have four lifting points in the base-frame and skid formed ends to the base-frame.

2.05 ACCESSORIES

The set shall be supplied with a basic tool kit engine maintenance handbook spare parts manual and generating set instruction handbook.

2.06 FINISH

All sheet steel used shall be zinc coated for rust protection. Sets shall be painted with an etching primer and finished with high gloss gray paint.

2.07 STARTING BATTERIES

A. Battery shall be lead acid type with plate cells contained in molded containers. Capacity shall be as required by the generating set's manufacturer.

2.08 BATTERY CHARGER

A. Charger shall be of the static, automatic, and constant voltage type. The battery charger shall be capable of returning the batteries for the engine to full charge within 4 hours after use.

2.09 AUTOMATIC TRANSFER SWITCHES

A. ATS must be from the same generator's manufacturer (ONE PACKAGE)

B. Rating and Performance: The automatic transfer switch shall be 4 –pole and rated for continuous duty operation in local ambient temperature. The transfer switch shall be rated for all classes of load, both inductive and non-inductive, at 415 volts and rating as shown on drawings. The automatic transfer switch shall be designed, built and tested to close on an inrush current of 20 times the continuous rating of the switch without contact damage, capable of withstanding the system fault clearing time of the over current device and capable of enduring 3000 cycles of operation at rated current without failure. One cycle shall consist of one complete opening and closing of both sets of contact. The transfer switch shall be operated from the source to which the load is to be transferred. The time of transfer in either direction shall not exceed one half second.

C. Operation: Upon failure on any of the phases or substantial drop of voltage (adjustable from 60-80% of nominal), the automatic transfer switch shall signal the emergency generator to start, when the emergency power attains approximately 90% of rated voltage and frequency, the automatic transfer switch shall automatically transfer the load to emergency power. When the normal power returns to above (adjustable from 80% to 90%) of normal voltage. The automatic transfer switch shall sense this and retransfer the load from emergency power to normal power, and signal the emergency source to stop. If the emergency source should malfunction while furnishing power to the load, the transfer switch shall automatically disconnect the load from emergency power to allow restarting (at least 5 times) the emergency source with no load connection. The automatic transfer switch shall include a disconnect device to electrically disconnect the control section from the transfer switch to permit safe access for maintenance or service during periods of normal operation. Failure of any-coil or disarrangement of any part shall not allow the switch to remain in a neutral position with both sets of main contacts open. If emergency source fails, transfer switch shall retransfer back to normal if available without time delay. **A by-pass switch** shall be in corporate as shown on drawings and as herein specified before.

D. Construction: The automatic transfer switch shall be electrically and mechanically interlocked to positively prevent the load from being simultaneously energized by normal and emergency power. The transfer switch shall be provided with a manual operator, which shall provide the same contact-contact transfer speed as the electrical operator. The manual switch shall not cause injury to an operator if the switch transfer mechanism becomes energized during manual operation.

E. All load contacts shall be silver surfaces, provided with arching tips, and are extinguishing devices. Automatic transfer switch shall be enclosed in a NEMA type 1 enclosure.

F. Control accessories shall mount on a dead-front panel. Indicating lamps and meters shall be in front mounted meter panel to be visible without opening doors.

G. The automatic transfer switch, which without restricting generally of the foregoing shall include the following features:

1. Full phase relay protection with three voltage sensing relays.

2. Time delay starting: An adjustable time delay from 1 sec. to 5 minutes shall be provided to prevent the emergency power source from needless starting and stopping during periods of momentary voltage fluctuation from the normal power source.

3. Retransfer time delay: An adjustable time delay from 0 to 60 minutes shall delay retransfer to normal to avoid short term normal power restoration.

4. After transfer to normal emergency generator shall run for a period 5 minutes before shutdown.

5. Test Switch marked Test-Off –Auto for test operation of standby plant and transfer switch.

6. Pilot lamps to indicate presence of all three phases of normal source and to indicate switch position.

H. Painting: Exterior surfaces of the equipment shall be painted with two coats of acceptable oil and heat resistant paint, applied after the surfaces have been thoroughly cleaned and prepared with a suitable priming coat.

I. Spare Parts engine, generator, and ATS : the Contractor shall furnish the spare parts normally provided plus the following:

1. Two sets of filters for all services.

2. Two spare injectors.

Spare parts shall be packed in suitable containers of boxes bearing labels clearly designating the contents and the piece of equipment for which they are intended.

Spare parts shall be delivered at the same time as the equipment to which they pertain. The Contractor shall stand safeguard such spare parts until completion of the work, at which time they shall be delivered to the Owner.

2.10. INSTALLATION AND TESTING

A. Gen-set shall be installed in its place on the anti-vibration base ,

B. Site testing of gen and ATS shall be carried out in the presence of the engineer.

2.11. MAINTENANCE AND WARRANTY

A. Initial maintenance: For a period of 36 months following date when Gen-set and ATS are completed and placed in operation, provide full maintenance of GEN SET and ATS. Correct operational faults and restore/replace defective/deteriorated components and finishes. Lubricate operational units and supply expendable materials as required for proper operations and maintenance. Monthly maintenance **visit** should be conducted and recorded.

B. Maintenance staff (3persons) to be trained to do the proper maintenance (preventive and corrective)

جدول التسعير

الرقم	البيان	المبلغ	
		فلس	دينار
-1	السعر الاجمالي		
	المجموع		
المجموع النهائي كتابتاً:-			
الاسم:			
الوظيفة:			
العنوان:			
رقم الهاتف:		ص.ب:	
توقيع المناقص والختم		التاريخ:	