



Invitation to Quote

**Invitation to Quote (ITQ) on behalf of Science and Technology
Facilities Council (STFC)**

Subject UK SBS CLARA Phase 2 Power Converter

Sourcing reference number UK SBS PR16210

UK Shared Business Services Ltd (UK SBS)
www.uksbs.co.uk

Registered in England and Wales as a limited company. Company Number 6330639.
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UKSBS

Shared Business Services

Table of Contents

Section	Content
1	<u>About UK Shared Business Services Ltd.</u>
2	<u>About our Customer</u>
3	<u>Working with UK Shared Business Services Ltd.</u>
4	<u>Specification</u>
5	<u>Evaluation model</u>
6	<u>Evaluation questionnaire</u>
7	<u>General Information</u>

Section 1 – About UK Shared Business Services

Putting the business into shared services

UK Shared Business Services Ltd (UK SBS) brings a commercial attitude to the public sector; helping our customers improve efficiency, generate savings and modernise.

It is our vision to become the leading provider for our customers of shared business services in the UK public sector, continuously reducing cost and improving quality of business services for Government and the public sector.

Our broad range of expert services is shared by our customers. This allows our customers the freedom to focus resources on core activities; innovating and transforming their own organisations.

Core services include Procurement, Finance, Grants Admissions, Human Resources, Payroll, ISS, and Property Asset Management all underpinned by our Service Delivery and Contact Centre teams.

UK SBS is a people rather than task focused business. It's what makes us different to the traditional transactional shared services centre. What is more, being a not-for-profit organisation owned by its customers, UK SBS' goals are aligned with the public sector and delivering best value for the UK taxpayer.

UK Shared Business Services Ltd changed its name from RCUK Shared Services Centre Ltd in March 2013.

Our Customers

Growing from a foundation of supporting the Research Councils, 2012/13 saw Business Innovation and Skills (BIS) transition their procurement to UK SBS and Crown Commercial Services (CCS – previously Government Procurement Service) agree a Memorandum of Understanding with UK SBS to deliver two major procurement categories (construction and research) across Government.

UK SBS currently manages £700m expenditure for its Customers.

Our Customers who have access to our services and Contracts are detailed [here](#).

Section 2 – About Our Customer

Science and Technology Facilities Council (STFC)

STFC is a world-leading multi-disciplinary science organisation, whose goal is to deliver economic, societal, scientific and international benefits to the UK and its people – and more broadly to the world.

STFC support an academic community of around 1,700 in particle physics, nuclear physics, and astronomy including space science, who work at more than 50 universities and research institutes in the UK, Europe, Japan and the United States, including a rolling cohort of more than 900 PhD students.

The organisation's large-scale scientific facilities in the UK and Europe are used by more than 3,500 users each year, carrying out more than 2,000 experiments and generating around 900 publications.

The combination of access to world-class research facilities and scientists, office and laboratory space, business support, and an environment which encourages innovation has proven a compelling combination, attracting start-ups, SMEs and large blue chips such as IBM and Unilever.

Examples of funded research

- STFC is providing the design infrastructure for the £23bn UK microelectronics sector that underpins strategically important industries worth £78bn to the UK economy
- STFC's ISIS facility and its users, working in partnership with the NHS, developed a novel material to improve the treatment of cleft lip and palate, speeding up healing times and reducing operating costs
- STFC's Synchrotron Radiation Source was used to understand how conventional anti-malarial drugs work, allowing the development of more effective treatment to reduce the devastating global impact of malaria
- STFC's ISIS facility is identifying new materials that can safely and conveniently store hydrogen, enabling the development of hydrogen-fuelled cars reducing reliance on fossil fuels and cutting carbon emissions

www.stfc.ac.uk

Section 3 - Working with UK Shared Business Services Ltd.

In this section you will find details of your Procurement contact point and the timescales relating to this opportunity.

Section 3 – Contact details		
3.1	Customer Name and address	Science & Technology Facilities Council (STFC) Daresbury Laboratory Sci-Tech Daresbury Daresbury, Warrington WA4 4AD
3.2	Buyer name	Hannah McNeill
3.3	Buyer contact details	Hannah.mcneill@uksbs.co.uk 01793 867063
3.4	Estimated value of the Opportunity	£100k - £125k
3.5	Process for the submission of clarifications and Bids	All correspondence shall be submitted within the Emptoris e-sourcing tool. Guidance Notes to support the use of Emptoris is available here. Please note submission of a Bid to any email address including the Buyer <u>will</u> result in the Bid <u>not</u> being considered.

Section 3 - Timescales		
3.6	Date of Issue of Contract Advert and location of original Advert	16/09/2016 Contracts Finder
3.7	Latest date/time ITQ clarification questions should be received through Emptoris messaging system	22/09/2016 11.00am
3.8	Latest date/time ITQ clarification answers should be sent to all potential Bidders by the Buyer through Emptoris	23/09/2016 17.00pm
3.9	Latest date/time ITQ Bid shall be submitted through Emptoris	27/09/2016 15:00pm
3.10	Date/time Bidders should be available if face to face	Not applicable

	clarifications are required	
3.11	Anticipated rejection of unsuccessful Bids date	03/10/2016 14.00pm
3.12	Anticipated Award date	03/10/2016
3.13	Anticipated Contract Start date	04/10/2016
3.14	Anticipated Contract End date	03/03/2017
3.15	Bid Validity Period	60 Days

Section 4 – Specification

1. INTRODUCTION AND SCOPE

1.1 Glossary

STFC	- Science & Technology Facilities Council
DL	- Daresbury Laboratory
CLARA	- Compact Linear Accelerator for Research and Applications
ASTeC	- Accelerator Science and Technology Centre
FEL	- Free-Electron Laser
A	- Ampere
V	- Volt
AC	- Alternating Current
DC	- Direct Current
MeV	- Mega Electron Volt Control
System	
EPICS	- Experimental Physics and Industrial
PLC	- Programmable Logic Controller
LED	- Light Emitting Diode
mH	- milli Henry
PPM	- Parts Per Million
PCB	- Polychlorinated Biphenyl
ADC	- Analogue to Digital Converter
DAC	- Digital to Analogue Converter
°C	- Degrees Centigrade
CDR	- Conceptual Design Report
Hz	- Hertz
CE	- Conformité Européenne / European Conformity
Pk-Pk	- Peak to Peak
IP	- International Protection / Ingress Protection
ISO	- International Organization for Standardization
IEC	- International Electro-technical Commission
COSHH	- Control Of Substances Hazardous to Health
ASCII	- American Standard Code for Information Interchange

1.2 Introduction

The Accelerator Science and Technology Centre (ASTeC) at STFC Daresbury Laboratory is currently designing a new FEL test facility, CLARA – the Compact Linear Accelerator for

Research and Applications. The facility will be used for research into efficient FEL schemes to produce ultra-short pulses of high- brightness coherent light. The electron beamline will transport an electron beam from the 5 MeV gun through a series of linacs accelerating the beam to a final energy of 250 MeV. The CLARA Conceptual Design Report (CDR) was published in July 2013 and can be found on the ASTeC website.
http://www.stfc.ac.uk/ASTeC/resources/PDF/CLARA_CDRv2.pdf.

1.3 Scope

This specification covers the procurement of 4-quadrant power converters for the CLARA project – phase 2. A total of 16 power converters are required of which 15 will be connected to Quadrupole magnets whilst the 16th is to be reserved as a spare. The power converters offered must operate in all four quadrants of the voltage-current axis. Therefore the output shall swing seamlessly from negative to positive voltage and the output current may also swing from positive to negative values. As a result the power supply will function as a source or a sink so it will either deliver power to a load (magnet) or absorb power from a load. This functionality is required to allow the Quadrupole magnet to be scanned at a rate of up to 10A/s through its full operating range to assess optimum magnetic field setting and lattice configuration

The Supplier shall furnish complete power converters and shall include:

- Operation and maintenance manuals
- Testing and inspection documentation
- Quality Assurance / Quality Control documentation
- Delivery to STFC Daresbury Laboratory, UK
- Rack mounting kits for mounting the power converters in standard 19 inch racks (if required)
- Mating connectors for the control interfaces (where not readily available)

2. PERFORMANCE REQUIREMENTS

2.1 Current and Voltage Ratings

The output specifications for the power converters are listed in Table 1 below.

Magnet Type	Number of Power Converters	Rated Voltage ² V	Rated Current ² A	Inductance mH
Quadrupole type 3	16	±60.0	±100.0	TBA

Table 1: Power converter requirements for Phase 2 Quadrupole magnets

Note 1: In determining the power converter ratings operational headroom of 10% and a voltage drop of typically 3V along the length of the cables have been allowed. The Supplier does not need to add further headroom.

The ratings of all components in this equipment shall be continuous ratings.

To maximise the available resolution it is preferred that the power converter current rating meets or is only a little higher than the current rating specified for the magnet. Suppliers able to offer current ratings no more than 20% above the specified value will be given additional credit in the tender assessment.

2.2 Technical parameters

The technical parameters listed in sections 2.3 to 2.10 should be entered in Table 3 by the

Supplier for each power converter type offered. Copies of the table, duly completed, should be returned with the Tender.

2.3 Operating range

The converter shall be adjustable from 0 to 100% of maximum rated current output for the normal magnet load. Power converters should exhibit no evidence of oscillation over their entire operating range into the anticipated loads.

2.4 Stability and temperature coefficient

The range of variation of output current over a period of 8 hours with no changes in operating conditions should be a maximum of 50 ppm of the figures listed in Table 1. A range of 20 ppm is desirable and Suppliers able to meet this level will be given additional credit in the tender assessment. The Supplier is invited to supply stability test data over an 8 hour period with line and load voltage and temperature constant.

The output current temperature coefficient shall be a maximum of 15 ppm/°C. The Supplier is requested to specify the temperature coefficient of stability and to supply stability test data showing the effects of ambient temperature variations. Suppliers able to offer an improved temperature coefficient of 10 ppm/°C or better will be given additional credit in the tender assessment.

2.5 Accuracy

Accuracy shall be within ± 200 ppm over a one year period without any re-calibration, this must take into consideration the power converters full range of permissible changes in operating and environmental conditions. After this point it is accepted that some re-calibration may be required in normal operation to maintain the required accuracy.

2.6 Reproducibility

The uncertainty in returning to a set current value with the same reference following an interruption of up to 24 hours with all electronics turned off should be a maximum of 50 ppm. Suppliers able to offer an improved level of 25 ppm or better will be given additional credit in the tender assessment.

2.7 Programming resolution

The programming resolution should be a maximum of 15 ppm. This is the smallest interval in output current that can be set using the programming interface. Suppliers able to offer an improved level of 10 ppm or better will be given additional credit in the tender assessment.

2.8 Power Factor

The power factor should be a minimum of 0.92 at 100% load. Suppliers are requested to provide the power factor at 50% and 100% load. Suppliers able to offer an improved level of 0.95 or better at 100% load will be given additional credit in the tender assessment.

2.9 Ripple

The current ripple into a 1 mH inductive load should meet the requirements listed in Table 2. Suppliers should state the worst case voltage ripple and corresponding frequency.

Frequency range	Maximum Current Ripple (peak to peak) relative to power converter rated current (1 mH load)
1 Hz < f < 20 kHz	25 ppm

Table 2: Voltage ripple requirements

Suppliers able to offer an improved level of 10 ppm or better will be given additional credit in

the tender assessment.

2.10 Efficiency

Efficiency should be a minimum of 85% at nominal mains input voltage and full rated load. Suppliers should quote the efficiency for each power converter type at 100% and 50% load. Suppliers able to offer an improved level of 92% or better at 100% load will be given additional credit in the tender assessment.

2.11 Warm-up Period

The supplier shall state the warm-up period required to achieve the required stability for each power converter type. This should be no more than 60 minutes. Suppliers able to offer an improved level of 30 minutes or better will be given additional credit in the tender assessment.

2.12 Zero Crossing

Due to the type of operation intended the power converter output must seamlessly pass from negative voltage and current values to positive voltage and current values with negligible delay when passing through zero. This precludes the use of a mechanical or motorised reversing switch to reverse polarity of the output; a bid incorporating a mechanical or motorised reversing switch will be rejected.

2.13 Input Supply

A single mains feed will be provided to each power converter. This will be either a single phase supply at 230V 50Hz and/or a three-phase supply at 400V 50Hz.

Line voltage may exhibit instantaneous ($< \frac{1}{2}$ cycle) fluctuations of $\pm 3\%$ and gradual variations of $\pm 10\%$. The maximum output ratings and performance parameters shall be maintained over these limits.

2.14 Duty cycle

The power converter shall be designed and constructed for continuous use. There will be occasional opportunities to clean or replace certain parts such as fans or filters.

2.15 Spares and consumables

The supplier should list consumable items such as fans and filters which may need regular replacement. A list of available spare parts should also be provided.

2.16 Fault Vulnerability

The power converter should be designed to withstand all foreseeable fault conditions without damage including:

- short-circuit on the output terminals when running at full load
- short-circuit on the output when switching on
- open circuit on the output terminals when running at full load
- failure of any internal component should not cause damage to other components
- loss of one phase or, if applicable, all three phases of the mains power input

2.17 Power Converter Cooling

All power converters shall be air-cooled.

2.18 Front panel display and Indicators

Each power converter should be equipped with a front panel display and appropriate LED indicators which should show as a minimum:

- Output voltage and current
- Interlock status
- Power converter status (e.g. ON, OFF, FAULT)

2.19 Earth-Fault Protection

Each power converter shall have an earth fault protection system which trips the power converter if the earth current exceeds a pre-set, and preferably user-adjustable, level. Operation of the earth fault protection should be indicated on the front panel.

2.20 Load Over-voltage protection

The power converter should be protected against any over-voltages which may be generated due to the inductive magnet load, for example by fitting a free-wheel diode across the power converter output. If this protection trips the power converter then remote reset shall be possible via the control system.

2.21 Power Converter Specification Summary

Power Converter type(s):			
Parameter	Specification	Power Converter Value	Unit
Stability, 8 hours (range)	≤ 50		ppm
Stability, temp. coefficient	≤ 15		ppm/°C
Current rating	± 100.0		A
Reproducibility	≤ 50		ppm
Programming resolution	≤ 15		ppm
Power factor: at 100% load at	≥ 0.92		
Current ripple: 1 Hz < f < 20 kHz Worst case ripple: Worst case ripple frequency:	≤ 25		ppm pk-pk ppm pk-pk
Efficiency: 100% load 50% load	≥ 85		% %
Warm-up period	≤ 60		minutes

Table 3: Power Converter Specification summary

3. CONTROL SYSTEM

3.1 Function of Control System

The System Operators will control all the power converters from the Main Control Room, which is remote from the power converters themselves.

The control interface must be comprehensive, providing all necessary information to remotely monitor and control the equipment during normal operation and under fault conditions.

The control system consists of embedded EPICS computers and PLCs at the interface layer which connects to the equipment being controlled. The interfaces will include digital, serial communications (RS232/422/485) and Ethernet.

3.2 External Interface

The power converter shall have facilities to control and read back the output current and to monitor and diagnose faults to the control system. The power converter should have fully digital control via either Ethernet or RS-232/422/485. This will provide a command set to monitor and control all states of the power converter. The communication protocol should be capable of operating at a rate of >10 command/response pairs per second. It should be able to recover automatically from lost characters or other transmission errors. In addition, a simple human-readable (plain ASCII) protocol is preferred.

3.3 External Interface Standards

All digital interface signals, (control, monitor and interlocks) should be designed to be failsafe. A safe state should normally be indicated by a closed contact providing a +24V signal or volt-free contacts. On power failure the system should indicate an unsafe state.

3.4 External Interlocks

A minimum of two interlocks shall be provided which disable the power converter output. The power converter control system will monitor this interlock which will be operated from external volt-free contacts to indicate conditions such as magnet over-temperature and magnet cooling water flow failure.

4. TESTING

4.1 Factory Tests

The supplier shall detail the tests that will be applied to each power converter at the factory before shipping and should supply copies of these test results. As STFC may wish to witness some or all of the factory tests the supplier shall give a minimum of 3 weeks' notice of the date of such tests.

4.2 Tests at Daresbury Laboratory

STFC may subject each power converter to some or all of the following tests. Any power converter whose results differ significantly from this specification or typical values for that type of power converter may be rejected. This testing may include:

- | | |
|-------------------------|---|
| • Control functions | • Visual inspection |
| • Interlock functions | • Ripple voltage/current measurement |
| • Isolation testing | • Efficiency test |
| • Thermal run | • Mains regulation tests |
| • 8 hour stability run | • Accessibility assessment |
| • Resolution check | • External connections evaluation |
| • Accuracy check | • Diagnostics facilities and ease of repair |
| • Reproducibility check | • Earth fault protection |

Any power converters which are tested and found not comply with the specification will be returned to the supplier at no cost to STFC.

5. ENGINEERING REQUIREMENTS

5.1 Mechanical Requirements

5.1.1 Manufacturing good practice

The equipment should be manufactured in accordance with the best existing techniques and recognised good engineering practices available at the time of construction. Power converters and ancillary equipment should be designed and constructed with an expected operational lifetime of greater than 20 years. It is understood that maintenance may be required during this period. Sub-assemblies should be designed for repair rather than replacement.

5.1.2 General access convenience

Power converters should be manufactured with strong consideration for unit reliability and serviceability. Safe and easy access to all external connection points must be incorporated into the overall design.

Easy access should be made available to all components, especially solid state power components, fuses, and printed circuit boards. For smaller power converters where complete replacement may be the appropriate response to a fault the supplier should offer a repair service.

5.1.3 Equipment housing enclosure

All equipment shall be capable of being housed in a standard 19" rack mount enclosure.

The space available on the CLARA project is limited, restricting the number of racks which can be installed within a rack room. The available space must be used efficiently to ensure all power converters for the associated magnets of that phase can fit within the power converter racks available. For this reason each power converter and any ancillary equipment shall have a combined height no greater than 6U or 267mm.

The standard rack depth for the CLARA project is 800mm. To allow for services, ventilation, and to provide clearance for rear connections, the power converter and any ancillary equipment shall have a depth no greater than 700mm.

Each power converter shall be capable of being inserted and removed from a rack by no more than two people. As such the weight of any individual item shall not exceed 45kg.

Each power converter and any ancillary equipment will be contained within enclosures to IP2X (IEC Standard 529 Degrees of protection provided by enclosures (IP code). Enclosure covers should only be removable with the use of tools. Following the removal of covers to allow access to the internal components, any high voltage conductor (greater than 25 Vac or 60V dc) should be shielded against contact to IP2X.

5.1.4 Laboratory Thermal Environment

The power converter racks will be located in an indoor equipment room. Ambient air will be drawn through the front of the rack for cooling purposes and exhausted from the top and also through the rear door if necessary. The air temperature within the room is expected to be maintained at approximately 24°C with day to day variations of $\pm 2^\circ\text{C}$.

The equipment should operate within a relative humidity range of 30% to 80% non-condensing.

5.1.5 Location and identification of terminals

Incoming and outgoing terminals shall be located at the rear of the unit.

Incoming AC terminals should be clearly marked with voltage and phase (if applicable). DC output terminals should be clearly marked with polarity and channel number (if applicable).

Connectors used for AC input power and DC output power should enable safe, secure and quick connection and disconnection.

Connectors for controls and interlocks should enable safe, secure and quick connection and disconnection without the use of tools.

The manufacturer should supply the mating partner for each of the interface connectors and any special tools for wiring these.

A safety ground connection shall be provided at the rear of the unit.

5.1.6 Arrangement of power converters

All equipment is to be mounted in one or more 19" racks dependent on size and spacing requirements. Sufficient rack mount kits and blanking plates to cover unused slots within a rack-mount kit shall be provided.

5.2 Engineering Standards

5.2.1 European CE mark

All power converters shall have full CE certification and display the CE mark.

5.2.2 International Electro-technical Commission Standards

The equipment and drawings must in all respects comply with the relevant I.E.C. standards, recommendations and reports.

5.2.3 COSHH Requirements

Materials defined as Hazardous to Health in the Control of Substances Hazardous to Health Regulations 1994 and the HSE publication EH40/95 Occupational Exposure Limits 1995 shall not be used without written permission from the Laboratory.

5.2.4 Asbestos and polychlorinated biphenyls (PCBs)

Asbestos or asbestos-type insulation, insulating or dielectric fluids containing PCBs shall not be used. Where a choice of materials is available (e.g. cables, support hardware), preference will be given to materials or equipment exhibiting a higher level of fire resistance.

6. PROJECT MANAGEMENT

6.1 Quality Assurance

The Supplier should maintain and apply a quality assurance program compliant with ISO-9001 or equivalent for the design, manufacture and testing of all components.

6.2 Responsibility of supplier

The supplier will be responsible for the final design, the production methods and the correct performance of all of the items supplied.

6.3 Delivery

Delivery shall be made to:
STFC Daresbury Laboratory
Sci-Tech Daresbury
Daresbury
Warrington
Cheshire
WA4 4AD
United Kingdom

Suppliers shall state the delivery time in weeks from receipt of order for the specified power converters.

6.4 Documentation

6.4.1 Documentation with Tender

The supplier should include with the tender information on the functionality and performance of each type of power converter including:

- The specific model, rating and dimensions of the type of power converter offered for each magnet type
- Complete documentation on the functionality of the control interface.
- The resolution and accuracy of any signal which is controlled or monitored through a serial interface and converted using a DAC or ADC (if applicable).
- Update rate of the serial interface (if applicable).
- Full details of the serial command/response protocol (if applicable)
- List and function description of all external interface signals.
- The performance parameters of the power converter (see Table 3)
- The reliability of the power converter and test results for reliability
- Information on rack mounting and cooling arrangements
- Details of the harmonic emissions and inrush current on the mains input.
- Details of the power factor and efficiency over the operating range
- Stability test data over 8 hour period
- Proposed delivery schedule

6.4.2 Initial progress report

The supplier shall produce within two weeks of notification of the order, a written report comprising of a definitive manufacturing and delivery schedule.

6.4.3 Interim progress reports

Further reports shall be produced at four week intervals detailing manufacturing progress. Any changes in the expected delivery date due to delays in manufacturing should be reported immediately.

6.4.4 Final Documentation

The Supplier shall provide complete documentation for each power converter type comprising at least one hard copy and one electronic copy. This documentation should include:

- User/operation/maintenance manuals containing specifications, operating instructions, control system interface commands/protocols, set-up instructions, block diagrams, maintenance procedures (both operational and preventative), normal adjustments and calibration set-up procedures.
- A general mechanical arrangement drawing of each power converter type.

6.4.5 Language

All labelling, manuals and other documentation shall be in English.

6.4.6 Nameplate

The power converter shall have a nameplate on each unit that should include the following information

- Supplier's name and address
- Power converter type and serial number
- Input voltage rating, voltage tolerance and frequency range

- Output voltage and current rating(s)

6.4.7 Shipping documentation

All shipping containers should be marked or tagged with the following information:

- Laboratory purchase order number
- Shipping address as specified within the contract.
- Supplier's name.
- Components contained within each package.
- Gross weight
- "This way up" if required.
- "Fragile" if required.

6.5 Warranty

The Supplier should guarantee the Power Converters against failure due to either faulty components or faulty manufacture for a minimum period of 12 months after delivery of the equipment to the Daresbury site.

This guarantee should not be invalidated by the opening of the case for visual examination and diagnostic tests, but it is warranted that no modifications will be undertaken without the written permission of the supplier.

Additional credit will be given to suppliers able to offer a longer warranty period than that specified.

6.6 Training

Where STFC Daresbury Laboratory considers that specific training on the installation, commissioning, operation and repair of the power converters is required this training should be included during the Factory Acceptance Test. Provision of training does not preclude the need to supply comprehensive User Manuals and other relevant documentation.

Section 5 – Evaluation model

The evaluation model below shall be used for this ITQ, which will be determined to two decimal places.

Where a question is 'for information only' it will not be scored.

The evaluation team may comprise staff from UK SBS, the Customer and any specific external stakeholders UK SBS deem required. After evaluation the scores will be finalised by performing a calculation to identify (at question level) the mean average of all evaluators (Example – a question is scored by three evaluators and judged as scoring 5, 5 and 6. These scores will be added together and divided by the number of evaluators to produce the final score of 5.33 ($5+5+6=16 \div 3 = 5.33$))

Pass / fail criteria		
Questionnaire	Q No.	Question subject
Commercial	SEL1.2	Employment breaches/ Equality
Commercial	FOI1.1	Freedom of Information Exemptions
Commercial	AW1.1	Form of Bid
Commercial	AW1.3	Certificate of Bona Fide Bid
Commercial	AW3.1	Validation check
Commercial	AW4.1	Contract Terms
Price	AW5.5	E Invoicing
Price	AW5.6	Implementation of E-Invoicing
Quality	AW6.1	Compliance to the Specification
Quality	SEL1.2	Accelerator Experience
-	-	Invitation to Quote – received on time within e-sourcing tool

Scoring criteria

Evaluation Justification Statement

In consideration of this particular requirement UK SBS has decided to evaluate Potential Providers by adopting the weightings/scoring mechanism detailed within this ITQ. UK SBS considers these weightings to be in line with existing best practice for a requirement of this type.

Questionnaire	Q No.	Question subject	Maximum Marks
Price	AW5.2	Price	45.00%]
Quality	PROJ1.1	Stability	10.00%
Quality	PROJ1.2	Temperature Coefficient	5.00%
Quality	PROJ1.3	Current rating tolerance	1.00%
Quality	PROJ1.4	Reproducibility	7.00%
Quality	PROJ1.5	Resolution	2.00%
Quality	PROJ1.6	Power Factor at 100% of load	1.00%
Quality	PROJ1.7	Current Ripple (1mH load)	7.00%
Quality	PROJ1.8	Efficiency at 100% load	1.00%
Quality	PROJ1.9	Warm up period	1.00%
Quality	PROJ1.10	Delivery	10.00%
Quality	PROJ1.11	Mechanical requirements	For information only
Quality	PROJ1.12	Warranty	10.00%
Quality	PROJ1.13	Spares	For information only

Evaluation of criteria

Non-Price elements

Each question will be judged on a score from 0 to 100, which shall be subjected to a multiplier to reflect the percentage of the evaluation criteria allocated to that question.

Where an evaluation criterion is worth 20% then the 0-100 score achieved will be multiplied by 20.

Example if a Bidder scores 60 from the available 100 points this will equate to 12% by using the following calculation: Score/Total Points available multiplied by 20 ($60/100 \times 20 = 12$)

Where an evaluation criterion is worth 10% then the 0-100 score achieved will be multiplied by 10.

Example if a Bidder scores 60 from the available 100 points this will equate to 6% by using the following calculation: Score/Total Points available multiplied by 10 ($60/100 \times 10 = 6$)

The same logic will be applied to groups of questions which equate to a single evaluation criterion.

The 0-100 score shall be based on (unless otherwise stated within the question):

0	The Question is not answered or the response is completely unacceptable.
10	Extremely poor response – they have completely missed the point of the question.
20	Very poor response and not wholly acceptable. Requires major revision to the response to make it acceptable. Only partially answers the requirement, with major deficiencies and little relevant detail proposed.
40	Poor response only partially satisfying the selection question requirements with deficiencies apparent. Some useful evidence provided but response falls well short of expectations. Low probability of being a capable supplier.
60	Response is acceptable but remains basic and could have been expanded upon. Response is sufficient but does not inspire.
80	Good response which describes their capabilities in detail which provides high levels of assurance consistent with a quality provider. The response includes a full description of techniques and measurements currently employed.
100	Response is exceptional and clearly demonstrates they are capable of meeting the requirement. No significant weaknesses noted. The response is compelling in its description of techniques and measurements currently employed, providing full assurance consistent with a quality provider.

All questions will be scored based on the above mechanism. Please be aware that the final score returned may be different as there may be multiple evaluators and their individual scores will be averaged (mean) to determine your final score.

Example

Evaluator 1 scored your bid as 60

Evaluator 2 scored your bid as 60

Evaluator 3 scored your bid as 40

Evaluator 4 scored your bid as 40

Your final score will $(60+60+40+40) \div 4 = 50$

Price elements will be judged on the following criteria.

The lowest price for a response which meets the pass criteria shall score 100. All other bids shall be scored on a pro rata basis in relation to the lowest price. The score is then subject to a multiplier to reflect the percentage value of the price criterion.

For example - Bid 1 £100,000 scores 100.

Bid 2 £120,000 differential of £20,000 or 20% remove 20% from price scores 80

Bid 3 £150,000 differential £50,000 remove 50% from price scores 50.

Bid 4 £175,000 differential £75,000 remove 75% from price scores 25.

Bid 5 £200,000 differential £100,000 remove 100% from price scores 0.

Bid 6 £300,000 differential £200,000 remove 100% from price scores 0.

Where the scoring criterion is worth 50% then the 0-100 score achieved will be multiplied by 50.

In the example if a supplier scores 80 from the available 100 points this will equate to 40%

by using the following calculation: Score/Total Points multiplied by 50 ($80/100 \times 50 = 40$)

The lowest score possible is 0 even if the price submitted is more than 100% greater than the lowest price.

Section 6 – Evaluation questionnaire

Bidders should note that the evaluation questionnaire is located within the **e-sourcing questionnaire**.

Guidance on completion of the questionnaire is available at
<http://www.uksbs.co.uk/services/procure/Pages/supplier.aspx>

PLEASE NOTE THE QUESTIONS ARE NOT NUMBERED SEQUENTIALLY

Section 7 – General Information

What makes a good bid – some simple do's ☺

DO:

- 7.1 Do comply with Procurement document instructions. Failure to do so may lead to disqualification.
- 7.2 Do provide the Bid on time, and in the required format. Remember that the date/time given for a response is the last date that it can be accepted; we are legally bound to disqualify late submissions.
- 7.3 Do ensure you have read all the training materials to utilise e-sourcing tool prior to responding to this Bid. If you send your Bid by email or post it will be rejected.
- 7.4 Do use Microsoft Word, PowerPoint Excel 97-03 or compatible formats, or PDF unless agreed in writing by the Buyer. If you use another file format without our written permission we may reject your Bid.
- 7.5 Do ensure you utilise the Emptoris messaging system to raise any clarifications to our ITQ. You should note that typically we will release the answer to the question to all bidders and where we suspect the question contains confidential information we may modify the content of the question to protect the anonymity of the Bidder or their proposed solution
- 7.6 Do answer the question, it is not enough simply to cross-reference to a 'policy', web page or another part of your Bid, the evaluation team have limited time to assess bids and if they can't find the answer, they can't score it.
- 7.7 Do consider who your customer is and what they want – a generic answer does not necessarily meet every customer's needs.
- 7.8 Do reference your documents correctly, specifically where supporting documentation is requested e.g. referencing the question/s they apply to.
- 7.9 Do provide clear and concise contact details; telephone numbers, e-mails and fax details.
- 7.10 Do complete all questions in the questionnaire or we may reject your Bid.
- 7.11 Do check and recheck your Bid before dispatch.

What makes a good bid – some simple do not's ☹

DO NOT

- 7.12 Do not cut and paste from a previous document and forget to change the previous details such as the previous buyer's name.
- 7.13 Do not attach 'glossy' brochures that have not been requested, they will not be read unless we have asked for them. Only send what has been requested and only send supplementary information if we have offered the opportunity so to do.
- 7.14 Do not share the Procurement documents, they are confidential and should not be shared with anyone without the Buyers written permission.
- 7.15 Do not seek to influence the procurement process by requesting meetings or contacting UK SBS or the Customer to discuss your Bid. If your Bid requires clarification the Buyer will contact you.
- 7.16 Do not contact any UK SBS staff or Customer staff without the Buyers written permission or we may reject your Bid.
- 7.17 Do not collude to fix or adjust the price or withdraw your Bid with another Party as we will reject your Bid.
- 7.18 Do not offer UK SBS or Customer staff any inducement or we will reject your Bid.
- 7.19 Do not seek changes to the Bid after responses have been submitted and the deadline for Bids to be submitted has passed.
- 7.20 Do not cross reference answers to external websites or other parts of your Bid, the cross references and website links will not be considered.
- 7.21 Do not exceed word counts, the additional words will not be considered.
- 7.22 Do not make your Bid conditional on acceptance of your own Terms of Contract, as your Bid will be rejected.

Some additional guidance notes 📖

- 7.23 All enquiries with respect to access to the e-sourcing tool and problems with functionality within the tool may be submitted to Crown Commercial Service (previously Government Procurement Service), Telephone 0345 010 3503.

- 7.24 Bidders will be specifically advised where attachments are permissible to support a question response within the e-sourcing tool. Where they are not permissible any attachments submitted will not be considered.
- 7.25 Question numbering is not sequential and all questions which require submission are included in the Section 6 Evaluation Questionnaire.
- 7.26 Any Contract offered may not guarantee any volume of work or any exclusivity of supply.
- 7.27 We do not guarantee to award any Contract as a result of this procurement
- 7.28 All documents issued or received in relation to this procurement shall be the property of UK SBS.
- 7.29 We can amend any part of the procurement documents at any time prior to the latest date / time Bids shall be submitted through Emptoris.
- 7.30 If you are a Consortium you must provide details of the Consortiums structure.
- 7.31 Bidders will be expected to comply with the Freedom of Information Act 2000 or your Bid will be rejected.
- 7.32 Bidders should note the Government's transparency agenda requires your Bid and any Contract entered into to be published on a designated, publicly searchable web site. By submitting a response to this ITQ Bidders are agreeing that their Bid and Contract may be made public
- 7.33 Your bid will be valid for 60 days or your Bid will be rejected.
- 7.34 Bidders may only amend the Contract terms if you can demonstrate there is a legal or statutory reason why you cannot accept them. If you request changes to the Contract and UK SBS fail to accept your legal or statutory reason is reasonably justified we may reject your Bid.
- 7.35 We will let you know the outcome of your Bid evaluation and where requested will provide a written debrief of the relative strengths and weaknesses of your Bid.
- 7.36 If you fail mandatory pass / fail criteria we will reject your Bid.
- 7.37 Bidders are required to use IE8, IE9, Chrome or Firefox in order to access the functionality of the Emptoris e-sourcing tool.
- 7.38 Bidders should note that if they are successful with their proposal UK SBS reserves the right to ask additional compliancy checks prior to the award of any Contract. In the event of a Bidder failing to meet one of the compliancy checks UK SBS may decline to proceed with the award of the Contract to the successful Bidder.
- 7.39 All timescales are set using a 24 hour clock and are based on British Summer Time or Greenwich Mean Time, depending on which applies at the point when Date and Time Bids shall be submitted through Emptoris.
- 7.40 All Central Government Departments and their Executive Agencies and Non Departmental Public Bodies are subject to control and reporting within Government.

In particular, they report to the Cabinet Office and HM Treasury for all expenditure. Further, the Cabinet Office has a cross-Government role delivering overall Government policy on public procurement - including ensuring value for money and related aspects of good procurement practice.

For these purposes, UK SBS may disclose within Government any of the Bidders documentation/information (including any that the Bidder considers to be confidential and/or commercially sensitive such as specific bid information) submitted by the Bidder to UK SBS during this Procurement. The information will not be disclosed outside Government. Bidders taking part in this ITQ consent to these terms as part of the competition process.

- 7.41 From 2nd April 2014 the Government is introducing its new Government Security Classifications (GSC) classification scheme to replace the current Government Protective Marking System (GPMS). A key aspect of this is the reduction in the number of security classifications used. All Bidders are encouraged to make themselves aware of the changes and identify any potential impacts in their Bid, as the protective marking and applicable protection of any material passed to, or generated by, you during the procurement process or pursuant to any Contract awarded to you as a result of this tender process will be subject to the new GSC from 2nd April 2014. The link below to the Gov.uk website provides information on the new GSC:

<https://www.gov.uk/government/publications/government-security-classifications>

UK SBS reserves the right to amend any security related term or condition of the draft contract accompanying this ITQ to reflect any changes introduced by the GSC. In particular where this ITQ is accompanied by any instructions on safeguarding classified information (e.g. a Security Aspects Letter) as a result of any changes stemming from the new GSC, whether in respect of the applicable protective marking scheme, specific protective markings given, the aspects to which any protective marking applies or otherwise. This may relate to the instructions on safeguarding classified information (e.g. a Security Aspects Letter) as they apply to the procurement as they apply to the procurement process and/or any contracts awarded to you as a result of the procurement process.

USEFUL INFORMATION LINKS

- [Emptoris Training Guide](#)
- [Emptoris e-sourcing tool](#)
- [Contracts Finder](#)
- [Tenders Electronic Daily](#)
- [Equalities Act introduction](#)
- [Bribery Act introduction](#)
- [Freedom of information Act](#)