



RFP UJ 85/2023: SUPPLY AND INSTALLATION OF A FULL SUPPLEMENTAL POWER SUPPLY SOLUTION ON THE UNIVERSITY OF JOHANNESBURG SWC CAMPUS

The University of Johannesburg (UJ) invites suitable suppliers to provide Turnkey Project Implementation Proposals for the site assessment, detailed design, supply, installation and commissioning of a full supplemental power supply solution on the University of Johannesburg Soweto Campus.

Purpose

UJ requires suitably qualified, experienced and competent persons or organizations to provide Turnkey Project Implementation Proposals for supply and installation of a full back up power generation system that will be able to supply the entire UJ Soweto campus from the main campus substation, and including the installation of an additional 300kWp carport solar PV system that will be integrated to the existing electrical network that is to be fed by the full supplemental backup power system:

Scope of work

The University of Johannesburg requires the installation of a supplemental power provision solution based on a Turnkey Project Implementation approach for the Soweto Campus - which is situated on Chris Hani road, Klipspruit. The objective of the Turnkey Project installation is to address ongoing power outages on the Soweto Campus as follows:

1. The solution should provide for the following scenarios:

- a. Full or partial loss of power due to local area disconnection
- b. Loss of power due to cable theft outside the UJ Soweto Campus area that interrupts supply to the campus
- c. Loss of power due to City Power scheduled load shedding
- d. Loss of power due to unexpected load shedding or load reduction events precipitated by ESKOM / City Power or other causes

2. The solution should provide supplemental backup power for the Soweto Campus based in line with the following specific requirements.

- a. The ability to supply a peak power as per the actual power consumption schedules that will be provided at the site briefing – i.e. this is presently measured at the City Power supply points and therefore has been reduced by the solar power provided by the solar PV system on the measured dates (suppliers should assume zero power from the solar PV installations on site for design purposes).
- b. The provision of a 10% headroom allowance to accommodate campus growth and / or power consumption growth in the foreseeable future.
- c. The ability to provide a 24 hour per day full load ongoing replacement power solution that can be relied upon for multi-week operation in the case of cable theft or other non-load shedding type of interruptions.
- d. The provided solution must be designed to provide full time 24/7 power to the campus – even in the case of primary equipment failure without relying on mobile / trucked in additional power solutions. The solution must also be designed so that in the case of zero solar PV input at peak consumption that the campus is fully provisioned.
- e. The ability to completely reinstate supply of power to all facilities on the campus within a maximum time period of 90-120 seconds after loss of supply at the main City Power / UJ substation.
- f. The full integration of any / all solar PV plant already existing on the campus (at present there is a 300kWp solar PV grid tied plant) into the proposed solution – details of inverters and panels of the present grid-tied solar PV installation will be made available to attendees at the site briefing.
- g. Proposers should include a further 300kWp solar PV plant set up and fully integrated into the campus power network as a principal part of the solution.
- h. The ability to automatically switch back to the City Power supply when a stable supply for more than 90-120 seconds has been sensed at the main City Power / UJ substation.
- i. The ability to handle the load increase rates commensurate with the present actual power consumption data to be made available at the site briefing.

- j. The provision of an on-campus fuel supply solution that will provide not less than 4 days full power supply operation without refuelling being required.
- k. The provision of the necessary mechanisms to ensure power supply operation for longer terms without shedding campus loads to allow for maintenance or other solution specific interventions.

3. The proposed solution should further comply with the following additional requirements.

- a. Be implemented in accordance with a professionally signed off design document for inspection prior to installation by UJ technical and campus staff and consultants if required – this must include at RFP submission a basic reticulation drawing making the manner of operation clear for evaluation purposes.
- b. The provision of a minimum 12 month warranty and support guarantee period by the main supplier for all supplied equipment – this includes items such as consumables e.g. batteries should they be included in the solution.
- c. The assurance of continued maintenance support, in the absence of other suppliers willing to support the installed solution, especially with regards to the motive power and control equipment.
- d. An introduction to more than one local maintenance and support company that could be contacted for support and maintenance.
- e. A guarantee to maintain minimum spares holding levels in local storage to ensure 12 months uninterrupted maintenance and support for at least 5 years after installation.
- f. The ability to swop out / remove units while operating other units for unscheduled maintenance needs that cannot be done in situ.
- g. All documentation for operational and maintenance use by UJ operational facilities management staff are to be supplied by the successful proposer.

4. The RFP respondents will have to take into consideration, but not limited to, provision of the following and acting in accordance with the responsibilities indicated below if their proposal is to be accepted:

- a) Turnkey Project Implementation Proposals are to include, but are not to be limited to, the assessment, design, supply, installation, commissioning of the necessary equipment, structures and control systems and fuel storage to enable the primary requirement of providing full 24/7 supplemental power to the Soweto Campus should there be any power interruption to the campus.
- b) The proposal should include an online monitoring system that will enable the monitoring of the PV solar system, full back up generator system and the fuel storage all together in the same platform.
- c) An assessment of the existing SWC electrical reticulation and substations with City Power connection points and how the proposed solution will be integrated into the campus electrical reticulation – the final electrical reticulation drawings and site drawings for structures and fuel storage are to be provided on an agreed drawing standard for use by the UJ Central Technical Services unit to update existing facilities documentation at Soweto Campus by the successful proposer.
- d) The additional solar PV installations proposed as part of the solution be implemented in the Soweto Campus Main Car Parking area adjacent to the Robert Sobukwe and Bram Fischer Buildings. This area is to be used as far as possible for panel installations using parking types of structures. Should more panel installations be envisaged by an RFP Respondent as part of their proposed solution (over and above the additional 300kWp required above) this should be limited to the rooftop area of the Imbizo Building using panels installed on normally ballasted support structures. The responsibility to check for the structural integrity of the SWC Imbizo building rooftop structure to handle the installation related to the static and dynamic loads that may arise from the rooftop panel installation - remains the responsibility of the selected supplier and this includes the provision of the relevant structural engineering documentation required in terms of the SANS 10400 – National Building Regulations.
- e) The RFP respondents must provide indications on a Soweto Campus site map of the proposed installation areas of all equipment and / or fuel storage and required construction and operational access during implementation. The selected supplier, once appointed, is to provide full drawings to the necessary standards for updating of Soweto Campus facilities documentation.

- f) The necessary application documents to be submitted to the City of Johannesburg for Site Development Plan and Building Plan approvals related to the project are the responsibility of the selected supplier.
- g) The selected supplier will be required to provide a detailed training programme for the entire installed supplemental backup system in order for the Soweto Campus technical team to be suitably trained so as to fully understand how the system works and how to operate it. RFP Respondents are required to indicate a high level programme as part of their RFP response.
- h) Any applications to government departments for the implementation of any / all solution elements required is also the responsibility of the appointed supplier.
- i) The RFP respondents must provide an operational cost estimate based on the supplied power consumption for a peak usage day as supplied at the site briefing together with assumptions regarding percentage solar PV power used to determine the expected cost of power provision for the 24 hour peak use period.
- j) The RFP respondents should provide an indication of service and maintenance requirements for the proposed equipment as well as indications of annual costs to maintain based on a defined (and made known) monthly and annual usage pattern.
- k) The RFP respondents must provide for the achieving of all certificates of compliance related to the total installation – including but not limited to electrical compliance certificates, fuel storage compliance certificates, battery storage compliance if required etc.
- l) RFP respondents must give an indication of the ability of their solution to allow for the addition of future renewable energy solutions that may be implemented on the Soweto Campus.
- m) Proposal to include the medium voltage equipment's, safety measures are to be considered in case of fire or put measures in place to prevent or minimize fire.
- n) The RFP respondents must acknowledge that if they are successful that all work on UJ campuses must comply *fully* with the Occupational Health and Safety Act (Act 85 of 1993) and all sub-regulations in place at the time. All work is also to be carried out in accordance with the requirements set out in the SANS 10400 - National Building Regulations, and relevant SANS regulations, applicable to a project of this nature.
- o) The successful appointed supplier must be willing to enter into an appropriate Contract with UJ, depending on the type of supplier appointed as the main contractor. Furthermore, if the supplier makes use of external consultants for any design development any agreement between themselves and the consultants must follow a standard agreement which must be furnished to the UJ upon request.

5. NOTE TO PROSPECTIVE TURNKEY RFP RESPONDENTS:

Due to the Turnkey nature of the project, a multi- PROCSA disciplinary approach will be required from the successfully appointed Turnkey RFP Respondent. Prospective RFP Respondents must therefore ensure that the following considerations are addressed in their RFP responses:

1. Turnkey RFP Respondents are to provide all of the necessary engineering and construction contracting resources required to fulfil the scope of the project including engineering, town planning, technical integration of the different project elements, construction and project construction management, and all other resources and services required to complete the project.
2. In some cases, some potential suppliers may have the capacity and capability to provide a full in-house Turnkey contracting capability to meet all of the project delivery requirements as detailed above. In the case that RFP Respondents do not have all of the required resources and services in-house they are to then indicate which company is proposed to be the main appointed supplier in terms of the Turnkey project approach, and to then indicate which other companies will be required to be sub-contracted to the main supplier so as to provide the additional necessary technical and project construction resources and services to fulfil the project delivery requirements. The RFP Respondents in this category must indicate what the responsibilities of the main appointed supplier and the sub- contracting parties will be, respectively, and also provide all of the necessary support documentation required to respond to the Technical Functionality under the Evaluation Criteria. This is to ensure that the sub-contracting companies meet the scoring requirements in the sections applicable so that the overall Main Turnkey RFP Respondent can meet or exceed the technical evaluation scoring requirements and be eligible for further evaluation.
3. As noted above, the appointed Turnkey supplier will be required to enter into a professional contracting agreement with UJ. The main appointed Turnkey Supplier will then be required to enter into its own professional or construction contracting agreements with sub-contractors as required.

Timeline: The anticipated timeline for the duration of the RFP component of the project is 2 months.

6. Evaluation Criteria

The tender will be evaluated in three (3) stages,

Stage 1: Tender Compliance Evaluation

Stage 2: Technical / Functionality Evaluation

Stage 3: Financial and B-BBEE Evaluation

6.1 Stage 2: Technical / Functionality Evaluation

No	Technical / Functionality Evaluation	Maximum Points Attainable	Comments
(i)	Relevant Experience Schedule <i>The proposal must include formal proof of similar projects completed and successfully commissioned</i> Number of similar projects included in reference pack (indicate client use, technology used, size and scope of project and final commissioned cost) Reference letters if submitted generate additional points as indicated. <ul style="list-style-type: none"> • 2 similar projects (6 points) + verifiable references (2 additional points) • 3 similar projects (8 points) + verifiable references (4 additional points) • 4 + similar projects (10 points) + verifiable references (5 additional points) 	15	
(ii)	Power Supply Levels <i>The proposal must indicate a continuous operating level that the motive power production units can maintain indefinitely:</i> <ul style="list-style-type: none"> • Continuous operating level on power production units designed for $\geq 90\%$ = 15 points • Continuous operating level on power production units designed for $< 85\%$ or $\geq 80\%$ = 10 points • Continuous operating level on power production units designed for $< 80\%$ = 0 points 	15	
(iii)	Absolute Power Supply <i>The proposal must indicate a continuous operating power output that the motive power production units can provide indefinitely:</i> <ul style="list-style-type: none"> • Minimum value of Maximum Power Supply \geq Maximum level on Site Briefing supplied SWC Campus Power consumption + 300kWp = 10 points • Maximum level on Site Briefing supplied SWC Campus Power consumption $<$ Minimum value of Maximum Power Supply $<$ Maximum level on Site Briefing supplied SWC Campus Power consumption + 300kWp = Scaled linearly between 5 and 10 points • Minimum value of Maximum Power Supply \geq Maximum level on Site Briefing supplied SWC Campus Power consumption = 5 points • Minimum value of Maximum Power Supply $<$ Maximum level on Site Briefing supplied SWC Campus Power consumption = 0 points 	10	
(iv)	Redundancy	10	

	<p><i>The proposal must indicate the manner in which unit failure or unit disconnection for maintenance or support to be done is to be handled without putting the power supply to the campus at risk:</i></p> <ul style="list-style-type: none"> • Formal redundancy built into solution (ie losing a single power production unit without compromising Power Supply required) = 10 points • No formal redundancy built into solution but single unit sized to allow for greater than 90% utilization on remaining units should a unit be removed from service > Required Power = 5 points • No indication of manner in which unit failure will be handled by the proposed solution = 0 points 		
(v)	<p>Level of Renewable Power Supply</p> <p><i>The proposal must indicate the level of direct renewable power supply related to the proposed plant – this takes into account all pre-installed solar PV already on site at the time of the site briefing</i></p> <ul style="list-style-type: none"> • More than 7.5% renewable power over 24 hours = 5 points • 2% < Renewable power supply over 24 hours ≤ 7.5% = scaled linearly from 0 to 5 points • Less than 2% renewable power over 24 hours = 0 points 	5	
(vi)	<p>Switchover Criteria</p> <p>(Time required to switch from City Power to Supplemental Power or vice-versa)</p> <ul style="list-style-type: none"> • Maximum switchover time at full load ≤ 90 seconds = 10 points • 90 seconds < Maximum switchover time at full load ≤ 150 seconds = scaled linearly from 0 to 15 points • Maximum switchover time at full load > 150 seconds = 0 points • <i>In the case of switch back this is time over and above the requirement for a stable 90 seconds of sensed power at the City Power supply point.</i> 	10	
(vii)	<p>Fuel Storage</p> <ul style="list-style-type: none"> • Onsite storage of fuel > 4 day at 100% load curve operation = 10 points • 1 day at 100% load curve operation ≤ Onsite storage of fuel < 4 day at 100% load curve operation = scaled linearly from 10 to 0 points • Onsite storage of fuel < 1 day at 100% load curve operation = 0 points <p>NOTE: All of above to be without an additional Environmental Assessment – if an Environmental Assessment is required by an RFP proposer then score is reduced by 3 points (but no lower than 0 score for this criteria)</p>	10	
(viii)	<p>List of Key Personnel</p> <p>Electrical/Mechanical engineers/Technologists, electrical technicians, CV's and qualifications.</p> <ul style="list-style-type: none"> • Engineer/Technologist with CV, Qualifications and PR ECSA X 2 (2 Points@ 1 point each) • Electrical/Mechanical Technicians, with CV and Qualifications X 2 (2 Points@ 1 point each) 	10	

	<ul style="list-style-type: none"> Labourers for trenching, mounting of equipment and installations etc. (6 Points for + 10 personnel) CVs and relevant qualifications 		
(ix)	Installation area requirement <ul style="list-style-type: none"> Less than 200m2 of installation space required on SWC Campus = 5 points 200m2 ≤ Installation space required < 500m2 = scaled linearly from 0 to 5 points Greater than 500m2 of installation space required on SWC Campus = 0 points <p>NOTE: All of above are excluding the required space for fuel storage</p>	5	
(x)	Tier 1 PV System (Panels and Inverters) <ul style="list-style-type: none"> Only tier 1 Suppliers with proof of certifications will get maximum point on this item (proposed non tier 1 equipment will score zero points) 	5	
(xi)	Programme Methodology <ul style="list-style-type: none"> Supplier to provide comprehensive project management plan, detailed programme schedule/timelines, procurement plan, and lead time on delivery of equipment on site 	5	
	Total Points Awarded	100	

To Note: A minimum of 70 out of 100 points is required by a bidder in stage 2, for further evaluation in terms of stage 3, Financial and B-BBEE.

6.2 Stage 3: Financial and B-BBEE Evaluation

Price: 80 points

B-BBEE: 20 points