

## Call for bids

Pursuant to point 2.4 of the SAMRS financial guide No.1 / 20166 (Principles of awarding contracts - goods, services and construction works intended for official development assistance of the Slovak Republic)

Call number: 46230/5922/2020

**1. Contracting authority:** **FCHPT STU in Bratislava**  
**Address:** Radlinského 9  
**City:** Bratislava  
**Postal code:** 812 37  
**ID:** 00397687  
**Contact person:** Ing. Barbora Dudášová  
**tel. No.:** +421 259325250  
**e-mail:** [barbora.dudasova@stuba.sk](mailto:barbora.dudasova@stuba.sk)

## 2. Object of contract

Supply of laboratory equipment within the SAMRS / 2018 / AFG / 01/01 project and securing the delivery of goods at the destination.

## 3. Type of contract

Contract for supplying goods and services

## 4. Short description of contract

Laboratory equipment and devices specified in the attached table. It is a laboratory facility designed for the educational process in the photovoltaic power production demonstration. Delivery of all equipment as a whole from one supplier is required. Tenders containing only part of the facilities and services will not be accepted. The facilities are procured under the official development assistance of the Slovak Republic for Afghanistan. The place of delivery and operation of these facilities is the city of Ghazni in Afghanistan.

## 5. Estimated value of contract: EUR 12150+VAT

## 6. Date of delivery (contract duration)

The goods must be transported and delivered at the place of delivery within 2 months after an official order is delivered to the supplier.

All operations related to the delivery of equipment at the place of destination must be completed by 30.09.2020 at the latest.

## 7. Main place of delivery of goods / provision of services

Technical and Engineering University of Ghazni, Ghazni Afghanistan

## 8. Financing conditions and payment arrangements

The subject of the contract will be financed from the resources of the Slovak Development Aid for Afghanistan under the SAMRS / 2018 / AFG / 01/01 project.

The costs will be paid by the customer in two payments:

1. 50 % after contract signature (issuance of order)
2. 50% after delivery of goods

### 9. Conditions of participation

1. The participant must submit an offer, which is complete and contains all the items listed in the attached table, the goods shall meet European quality standards, the participant must list all required information (price, producer and internet link) for each item.
2. The participant shall ensure the transportation of devices to Ghazni Afghanistan.
3. The participant must provide warranty and post-warranty service of the equipment
4. The participant shall prove the ability to carry out this contract at least by 1 reference of similar performance and experience with delivery of goods to Afghanistan.

### 10. Bid evaluation criteria

All offers will be evaluated in the first step to meet the equipment's technical requirements. Offers which are not complete or do not meet the required technical requirements shall be excluded. Subsequently, it is assessed whether the requirements of this call for delivery of goods to the place of destination are met. Offers that do not include these requirements will be excluded. Bidders who meet all the conditions set out in point 9 will be listed in ascending order, with the successful bidder being the first. We will start negotiating the delivery of the goods with the successful tenderer and sign the contract.

### 11. Tender deadline

Date and time: all offers must be supplied until July 9, 2020 at 4:00 pm

### 12. Tender Place

FCHPT STU in Bratislava, Department of Chemical and Biochemical Engineering,  
Radlinského 9, 812 37 Bratislava

Contact address: [barbora.dudasova@stuba.sk](mailto:barbora.dudasova@stuba.sk)

Offers must be sent to the e-mail address listed

### 13. Content of offer

The offer must contain, in addition to the quotation, the following documents and documents in paper form (signed scans are required):

- a completed table annexed to this call
- company business licence
- min. 1 reference of similar performance

In Bratislava June 16, 2020	Signature of the Contractor authority:
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NO	Device name and description	QTY	UNIT	Your price DAT Kabul
1	MULTIFUNCTION INSTRUMENT FOR TESTING SINGLE AND THREE-PHASE PHOTOVOLTAIC SYSTEMS ( The device should have the same quality and have the same parameters as model device SOLAR 300N and should contains the instruments mentioned in a, b c, d and e)  For detail description see below	1	set	
2	EARTH LEAKAGE CURRENT GROUND RESISTANCE CLAMP METER.  The device should have the same quality and have the same parameters as model device UNI-T UT278A  For detail description see below	1	piece	
3	Thermal Imager Kit (Thermography Camera ) The device should have the same quality and have the same parameters as model device  Fluke TiS20+  For detail description see below	1	Piece	
<b>TOTAL</b>				

**1. SOLAR 300N MULTIFUNCTION INSTRUMENT FOR TESTING SINGLE AND THREE-PHASE PHOTOVOLTAIC SYSTEMS** (Including the instruments mentioned in a, b, c, d and e below).

**DEVICE DESCRIPTION:**



## Technical specifications:

<b>DISPLAY:</b>	
Features:	graphic TFT with backlight, ¼ VGA (320 x 240pxl)
Touch screen:	present
Colours:	64k
Contrast:	adjustable
<b>POWER SUPPLY:</b>	
SOLAR300 internal power supply:	Li-ION, 3.7V rechargeable battery
Battery life:	> 6 hours
External power supplier:	AC/DC 100-240V 50/60Hz / 5VDC adapter
Auto power off:	after 5 minutes without using the instrument (no external power)
SOLAR-01 power supply:	2x1.5V alkaline batteries type AA LR06
SOLAR-02 power supply:	4x1.5V alkaline batteries type AAA LR03
SOLAR-0x max recording time (@ IP=5s):	approx 1.5h
<b>MEMORY AND PC INTERFACE</b>	
Internal memory:	15 Mbyte
External memory:	USB memory stick
External memory:	compact flash card
Operative system:	Windows CE
PC communication port:	USB
<b>MECHANICAL FEATURES</b>	
Size:	235 (W) x 165 (L) x 75 (D) mm
Weight (batteries included):	1.0 kg
IP degree:	IP50
<b>ENVIRONMENTAL CONDITIONS:</b>	
Reference temperature:	23°C ± 5°C
Working temperature:	0° ÷ 40°C
Working humidity:	< 80% UR
Storage temperature (batt. not included):	-10 ÷ 60°C
Storage humidity:	< 80% UR
<b>GENERAL REFERENCE STANDARDS:</b>	
Safety:	IEC/EN61010-1
Safety of measurement accessories:	IEC/EN61010-031, IEC/EN61010-2-032
Insulation:	double insulation
Pollution degree:	2
Overvoltage category:	CAT IV 600V to ground, max 1000V between inputs
Max altitude of use:	2000m
Quality networks:	IEC/EN50160
Quality of power measurements:	IEC/EN61000-4-30 class B
Flicker:	IEC/EN61000-4-15, IEC/EN50160
Unbalance:	IEC/EN61000-4-7, IEC/EN50160

**PURPOSE:** The SOLAR-300N carries out all tests required for the verification of the efficiency of single-phase and three-phase photovoltaic systems. Testing photovoltaic systems requires contemporarily measuring environmental parameters (incident irradiation of modules, temperature of environment and modules) and electric parameters (continuous power, alternating power, etc).

*SOLAR 300N MULTIFUNCTION INSTRUMENT should be provided with accessory instruments listed below in part (a) (b) (c), (d) and (e)*

### **Associaries to SOLAR 300N MULTIFUNCTION INSTRUMENT:**

- a- MODEL SOLAR-02 REMOTE UNIT FOR IRRADIATION TEMPERATURE ON PV PLANTS**



**PURPOSE:** The remote unit SOLAR-02 has been designed to measure sun irradiation ( $W/m^2$ ) and temperature ( $^{\circ}C$ ) by means of appropriate probes connected to it. It can also be used in combination with an HT Italia instrument with USB connection (SOLAR300, SOLAR300N) and with RF connection (SOLAR I-V, I-V, I-V400) to carry out the above-mentioned measurements for testing/recording the efficiency of single-phase and three-phase photovoltaic installations and detection of I-V curve of PV module/strings.

***b- MODEL HT304N REFERENCE CELL FOR IRRADIATION MEASUREMENTS ON SILICON SINGLE AND POLY CRYSTALLINE PV MODULES.***



**PURPOSE:** The HT304 accessory is a reference cell for sun irradiation measurement ( $W/m^2$ ) on PV modules manufactured with Silicon Single and Poly crystalline technology (the case of thin film modules is considered as a Poly crystalline). The cell is designed for use together with HT Italia instruments for testing /recording on PV generic plants as SOLAR300, SOLAR300N, IV400, SOLAR250, SOLAR-IV models by connection with the remote SOLAR-02. The accessory is supplied with a bracket for a correct mounting on a panel surface.

***c- HT Instruments MPP300 Adapter for PV Testing on Multistring Installation***

Accessory for measuring and recording the efficiency of a single- and three-phase, single- and multi-string photovoltaic system

DC/AC TRMS voltage meas. (single-phase and three-phase)

DC/AC TRMS current meas. (single-phase and three-phase)

DC/AC power measurement (single-phase and three-phase)

Simultaneous measurements up to 3 strings (max 3 MPPT)

Connection with master unit SOLAR300N and SOLAR I-V

Power supply with rechargeable Li-ION battery

LED operating indications

USB port for connection to unit SOLAR300N

RF connection for connection to SOLAR-02 and SOLAR I-V

Internal memory for saving recordings



#### ***d. HT4004 AC/DC Transducer Rigid Clamp***

Transducer for AC/DC currents 0 10 - 0 100 A AC/DC

Measuring range: 0.1 ÷ 100 A

DC Precision: +- 1.5% of reading + 0.01A

AC Precision: +- 2.0% of reading + 0.5 A

Output Signal: 1 V AC / DC



**e. HT4005K AC 200A transducer rigid clamp**

- Transducer for AC currents 0 200 A AC
- AC current measurement up to 200A
- Measurement range: 0.1A - 200A
- Frequency range: 40Hz - 3kHz
- Maximum output signal: 1VAC



## 2. UNI-T UT278A Earth Leakage Current Ground Resistance Clamp Meter



PURPOSE: The use of this instrument makes possible to measure the flow of earth leakage current through protective ground conductors.

## 3. Fluke TiS20+ Thermal Imager Kit (Thermography Camera )



Quality images - 120x90 resolution (10,800 pixels)

Quickly scan large areas with point and shoot simplicity

3.5 inch, 320x240 LCD

Share images in real-time across teams with Fluke Connect

Optimize images in the most effective way with IR-Fusion technology