

Request for Quotations (RFQ)

RFQ Number: ICTEC-2021-011

Issuance Date: 22.02.2021

Deadline for Offers: 09.03.2021, 15:00 Chisinau time

Description: Supply of Electrical engineering laboratory equipment and teaching stand for the Technical University of Moldova

For: Moldova ICT Excellence Center Project (ICTEC)

Funded By: United States Agency for International Development (USAID), Contract No. AID-117-A-15-00002

Issued by: National Association of Private ICT Companies (ATIC)

ATIC Point of Contact: llivadari@ict.md - Liuba Livadari, Procurement Manager.

Section 1: Instructions to Offerors

Introduction: The Moldova ICT Excellence Center (ICTEC) Project is a USAID program implemented by the National Association of Private ICT Companies (ATIC).

Based on the Year 6 priorities of the Tekwill Project, under the component “Tekwill in Every University” Concept, it is envisioned to improve the universities infrastructure and establish specialized laboratories- this element is proposed to be realized based on the Armenian Experience identifying the most valuable soft/hard assets of the universities (Eg. UTM-engineering for IT and verticals - for eg. PowerTech). One of the promising verticals to apply Tech, Engineering and Making relates to the Power Tech Concept. Thus, as part of the activity, ATIC requires the purchase of Electrical engineering laboratory equipment and teaching stand for the Technical University of Moldova. The purpose of this RFQ is to solicit quotations for these items.

For more details please refer to Section 3 – Technical Specifications and Annex 1 – PowerTech Concept.

Offerors are responsible for ensuring that their offers are received by ATIC in accordance with the instructions, terms, and conditions described in this RFQ. Failure to adhere with instructions described in this RFQ may lead to disqualification of an offer from consideration.

1. Offer Deadline and Protocol:

Offers must be submitted **not later than 15:00, local Chisinau time, on March 09, 2021** electronically and/or in hard copy to the ATIC office:

Electronic submission: Any email offers must be sent to the following address:

In attention of

to: llivadari@ict.md Liuba Livadari, Procurement Manager

cc: achirita@ict.md Ana Chirita, Strategic Projects Director

Offers must be submitted in one package in pdf format files, including the Forms A-F and other mandatory documents required by this solicitation documents – details in Section 3 - Technical Specifications. *The Quotation for the requested goods shall follow the FORM F – Financial offer.*

Hard copy submission: Any hard copy offers must be stamped and signed by the offeror's authorized representative and delivered to the following address:

In attention of:

Liuba Livadari, Procurement Manager

National Association of Private ICT Companies (ATIC) / ICTEC Project

9/11, Studentilor Str., Chisinau MD2045, Moldova.

The following number of copies is required in each submission:

Three (3) original hardcopies and one (1) electronic copy on CD, per the instructions below.

The offer must be enclosed in a sealed envelope with the name and address of the offeror and the RFQ number ("RFQ No. ICTEC-2021-011") clearly marked on the outside. If multiple envelopes must be submitted for the technical offer, due to the size of an offer, offerors must ensure that each envelope is sealed and clearly marked with the information described above

Please reference the RFQ number in any response to this RFQ. Offers received after the specified time and date will be considered late and will be considered only at the discretion of ATIC.

- 2. Questions:** Questions regarding the technical or administrative requirements of this RFQ may be submitted **no later than 15:00 local Chisinau time on March 4, 2021 by email to llivadari@ict.md**. Questions must be submitted in writing; phone calls will not be accepted. Questions and requests for clarification—and the responses thereto—that ATIC believes may be of interest to other offerors will be circulated to all RFQ recipients who have indicated an interest in bidding.

Only the written answers issued by ATIC will be considered official and carry weight in the RFQ process and subsequent evaluation. Any verbal information received from employees of ATIC or any other entity should not be considered as an official response to any questions regarding this RFQ.

- 3. Specifications:** *Section 3 contains* the technical specifications of the required items. All commodities offered in response to this RFQ must be new and unused. Please note that, unless otherwise indicated, stated brand names or models are for illustrative description only. An equivalent substitute, as determined by the specifications, is acceptable.
- 4. Quotations:** Quotations in response to this RFQ must be priced on a fixed-price, all-inclusive basis, including delivery and all other costs required in Section 3. Offerors are requested to provide quotations guided by the Quotation format (FORM F) using company's letterhead.

During the validity of the quotation, ATIC shall not accept any changes in unit prices, due to escalation, inflation, exchange rates fluctuation, or other market factors, after the receipt of the quotation. At the time of Contract award, ATIC reserves the right to increase or decrease the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without changes in the unit price or other terms and conditions.

Currency of Quotation: Pricing must be presented in USD (VAT 0%, and exempt of customs taxes).

Quotation validity: Offers must remain valid for not less than 90 calendar days after the offer deadline.

In exceptional circumstances, ATIC may request Companies to extend the validity of the Quotation beyond what has been initially indicated in this RFQ. The Proposal shall then confirm the extension in writing, without any modification whatsoever on the Quotation.

Partial Quotes: NOT allowed.

5. **Mandatory documents to be submitted**: Offerors responding to this RFQ are requested to submit the following documents:
- Application form (FORM A)
 - Letter of Transmittal (see FORM B)
 - Offeror's Summary Sheet (see FORM C)
 - Certification Regarding Responsibility Matters (see FORM D)
 - Evidence Regarding Responsibility Matters (see FORM E)
 - Dully filled in Quotation form (FORM F), in line with the requirements in Annex 1;
 - Company profile (brief information);
 - Copy of Company's Registration Certificate;
 - Detailed technical description of the offered goods;
 - Certificates of quality for the offered goods (where applicable);
 - Statement or certificate of origin for the offered equipment;
 - A statement whether any import or export licenses are required in respect of the goods to be purchased including any restrictions on the country of origin, use/dual use nature of goods or services, including and disposition to end users (where applicable);
 - Confirmation that licenses of this nature have been obtained in the past and an expectation of obtaining all the necessary licenses should the quotation be selected (where applicable);
 - Quality Certificate (e.g., ISO, CE, etc.) and/or other similar certificates, accreditations, awards and citations received by the Bidder, if any;
 - Accreditations, Markings/Labels, Environmental Compliance Certificates, and other evidences of the Bidder's practices which contributes to the ecological sustainability and reduction of adverse environmental impact (e.g., use of non-toxic substances, recycled raw materials, energy-efficient equipment, reduced carbon emission, etc.), either in its business practices or in the goods it manufactures;
 - Manufacturer's Authorization of the Company as a Sales Agent (if Supplier is not the manufacturer);
 - Description of warranty arrangements, name and address of the authorized service situated in or in close proximity to the Republic of Moldova (please describe the procedure).
 - 2 Reference Letters (proof of satisfactory performance) from Clients in terms of (3) years;
6. **Delivery**: DAP Chisinau. The delivery location for the items described in this RFQ is Chisinau, Moldova. As part of its response to this RFQ, each offeror is expected to provide an estimate (in calendar days) of the delivery timeframe (after receipt of order). The delivery estimate presented in an offer in response to this RFQ must be upheld in the performance of any resulting contract.
7. **Customs clearance** of goods shall be done by the supplier: Foreign companies are encouraged to contact a local brokerage company to manage the customs clearance procedure (costs to be included in/covered by the quotation).
8. **Source/Nationality/Manufacture**: All goods and services offered in response to this RFQ or supplied under any resulting award must meet **USAID Geographic Code 110** in accordance with the United States Code of Federal Regulations (CFR), [22 CFR §228](#). The cooperating country for this RFQ is Moldova.

Offerors may not offer or supply any commodities or services that are manufactured or assembled in, shipped from, transported through, or otherwise involving any of the following countries: Burma (Myanmar), Cuba, Iran, North Korea, (North) Sudan, Syria.

9. **Warranty:** Warranty service and repair within the cooperating country is required for all commodities under this RFQ. The warranty coverage must be valid on all commodities for a minimum of period of 1 year, after delivery and acceptance of the commodities, unless otherwise specified in the technical specifications. At the time that any commodity is transferred to the Government of Moldova/Beneficiary, the ATIC, or another entity within the cooperating country, all rights to warranty support and service shall be transferred with the commodity to that entity's end-user.

10. **Taxes and VAT:**

The agreement under which this procurement is financed does not permit the financing of any taxes, VAT, tariffs, duties, or other levies imposed by any laws in effect in the Cooperating Country. No such Cooperating Country taxes, VAT, charges, tariffs, duties or levies will be paid under an order resulting from this RFQ.

11. **Eligibility:** By submitting an offer in response to this RFQ, the offeror certifies that it and its principal officers are not debarred, suspended, or otherwise considered ineligible for an award.

12. **Evaluation and Award:** The award will be made to a responsible offeror whose offer follows the RFQ instructions, meets the eligibility requirements, and is **lowest-priced, technically-acceptable approach:** meets or exceeds the minimum required technical specifications, and is judged to be the best value based on a lowest-price, technically-acceptable basis.

Evaluation Criteria:

- Technical responsiveness to technical requirements (and lowest price);
- Company's minimum 3-year experience in the field of supply of similar equipment;
- Availability of certificates of quality and origin for the offered equipment;
- Full acceptance of the RFQ conditions;
- Maximum delivery period not to exceed 40 calendar days upon signature of contract;
- Warranty on parts and labor - minimum 24 months.
- After-Sales services:
 - a) Service Center in Moldova or in close proximity to Moldova (*Mandatory information on the Service Center Company name, address, contact person, e-mail, phone number*).
 - b) Technical Support
 - c) Brand new replacement if purchased unit is beyond repair (under Warrantee period)
 - d) Training on operations and maintenance for the beneficiary (to be provided online/offline by a qualified specialist).

Please note that if there are significant deficiencies regarding responsiveness to the requirements of this RFQ, an offer may be deemed "non-responsive" and thereby disqualified from consideration. ATIC reserves the right to waive immaterial deficiencies at its discretion.

Best-offer quotations are requested. It is anticipated that award will be made solely on the basis of these original quotations. However, ATIC reserves the right to conduct any of the following:

- ATIC may conduct negotiations with and/or request clarifications from any offeror prior to award.

- While preference will be given to offerors who can address the full technical requirements of this RFQ, ATIC may issue a partial award or split the award among various suppliers, if in the best interest of the Project.
- ATIC may cancel this RFQ at any time.

Please note that in submitting a response to this RFQ, the offeror understands that USAID is not a party to this solicitation and the offeror agrees that any protest hereunder must be presented—in writing with full explanations—to the ICTEC Project for consideration, as USAID will not consider protests regarding procurements carried out by implementing partners. ATIC, at its sole discretion, will make a final decision on the protest for this procurement.

13. Terms and Conditions: This is a Request for Quotations only. Issuance of this RFQ does not in any way obligate ATIC or ICTEC Project to make an award or pay for costs incurred by potential offerors in the preparation and submission of an offer.

This solicitation is subject to ATIC's standard terms and conditions. Any resultant award will be governed by these terms and conditions; a copy of the full terms and conditions is available upon request. Please note the following terms and conditions will apply:

- ATIC's standard **payment terms** are 100% net 15 days after receipt, installation, testing, training and acceptance of any commodities and/or deliverables and upon submission of payment documents (Invoice). Payment will only be issued to the entity submitting the offer in response to this RFQ and identified in the resulting award; payment will not be issued to a third party.
- Other Payment Terms:** Advance payment allowed up to 20% of the contract amount.
- Any award resulting from this RFQ will be **firm fixed price**, in the form of a Contract for goods.
- No commodities or services may be supplied that are manufactured or assembled in, shipped from, transported through, or otherwise involving any of the following countries: Burma (Myanmar), Cuba, Iran, North Korea, (North) Sudan, Syria.
- Any international air or ocean transportation or shipping carried out under any award resulting from this RFQ must take place on U.S.-flag carriers/vessels.
- United States law prohibits transactions with, and the provision of resources and support to, individuals and organizations associated with terrorism. The supplier under any award resulting from this RFQ must ensure compliance with these laws.
- The title to any goods supplied under any award resulting from this RFQ shall pass to ATIC following delivery and acceptance of the goods by ATIC. Risk of loss, injury, or destruction of the goods shall be borne by the offeror until title passes to ATIC.
- Penalty for delays: 0.5%** of contract for every day of delay, up to a maximum duration of 1 calendar month. Thereafter, the contract may be terminated.

Section 2: Offer Checklist

To assist offerors in preparation of proposals, the following checklist summarizes the documentation to include an offer in response to this RFQ: the list of documents as per Section 1, p.5 Mandatory documents to be submitted:

Section 3: Specifications and Technical Requirements

The table below contains the technical requirements of the commodities/services. Offerors are requested to provide quotations containing the information below on official letterhead or official quotation format, guided by the Form F – Quotation Format

Line Item	Description and Specifications	Qty
	Laboratory stand electric machines	
1	Dynamic servo machine test stand, powersupply, cables, accessories for electrical machines – please detail all components/accessories included and indicate their quantity and price separately	1
1.1	Component 1	
1.2.	Component 2	
1.3.	Component 3	
1.n.	...	
2	Synchronous Reluctance machine – EEM5	1
3.	Brochure and Instructions Manual for each item (EN and RO/RU)	1
Installation required		
Training of beneficiary's staff on the use of equipment: (online or offline, both options accepted)		

*The equipment shall be assembled safely and well packed, ready to use, or provided components and accessories to be assembled by the Supplier's delegated staff at the premises of the beneficiary (Technical University of Moldova in Chisinau).

Other Requirements:

Delivery Lead Time (up to 40 calendar days)

Delivery - DAP Chisinau (including the services of a local brokerage company) - preferable.

Warranty and After-sales Requirements

- a) Warranty – min 24 months
- b) Brand new replacement of items if the items are beyond repair (under warranty period)
- c) Training on Operations and Maintenance of the equipment (online or offline, both options accepted)
- d) Availability of Service Center in Moldova (or in close proximity to Moldova). *Mandatory information on the Service Center Company name, address, contact person, e-mail, phone number).*
- e) Technical support

Validity of Quotation - 90 calendar days

PowerTech Concept, part of FabLab Concept

As part of the Vertical Driven Programs, together with the representatives of the Technical University of Moldova, we have identified the need of expanding existing technologies towards vertical. The concept on the vertical part relates to providing a comprehensive program in the areas of potential for IT and linking IT with non IT sectors.

Based on the Year 6 priorities of the Tekwill Project, the team has set up task to support several vertical driven initiatives, including creation of 2 mini satellites centers in Chisinau- PowerTech and Fintech. At the same time as a priority for the Tekwill in Every University Concept, it is envisioned to improve the universities infrastructure and establish specialized laboratories- this element is proposed to be realized based on the Armenian Experience identifying the most valuable soft/hard assets of the universities (for e. g. State University- data science, UTM- engineering for IT and verticals (for eg PowerTech), Balti- automotive, Cahul- pedagogy). It is proposed to provide a standard package of equipment, training and capacity building to support both the teachers, students and future R&D opportunities. They can also provide environment for developing their own products together with incubation and acceleration programs. The laboratories opened at the universities will replicate the Tekwill center environment at a smaller size, aiming promotion of research and exploration of ICT opportunities.

The main actions will be focused on:

- Provide new curricula linked with modern labs- This action will permit to match universities' capacities with national and international trends in ICT. There will be assessed universities, which have IT faculties, but also faculties closely connected/related to IT, as finance, agriculture, biology, etc. While providing the assessment, the experts will analyze physical spaces, human resource that can be involved in continuous use of labs and updated curricula. Also, universities will have to prove their interest in opening new labs and ensure sustainability. The action will fully look into technical equipment endowment and operation model of the laboratory (specific examples are Aneil from Yerevan, Armenia- engineering center combining both students and acceleration work)
- Modernize curricula and increase the qualification of the faculty- any lab is not working without relevant content. Tekwill will look into developing necessary content and methodologies to get educational materials to necessary audience with usage of digital tools. Software development and non-engineering related tech disciplines can be quite quickly adjusted to this reality. This program will be piloted started Autumn 2021 and reflected in the next year Annual Plan.
- To support professors, the project may decide to support visits for professors in gaining skills and sharing experience on related subjects, if the pandemic situation allows. At the same time, the professors from the selected universities, who are involved in educational programs submitted for revision or update, will be invited to pay a visit to an university, where the similar programs are

implemented for a long time, so they can learn from their peers best practices in preparation of qualified specialists.

- Create Synergies with existing infrastructure provided by Tekwill and FabLab, where also extracurricular activities may happen and be performed using the above equipment, Tekwill Team abilities and existing+ new infrastructure.

One of the promising verticals to apply Tech, Engineering and Making relates to the Power Tech Concept.

The program aims at developing:

1. Capacity of the university to look into technologies of the future.
2. Develop a mainstream of new courses/activities for students and general public
3. Raise awareness of green technologies, sustainable technologies, energy efficiency
4. Create new partnerships between tech and non tech companies and entrepreneurs
5. Align towards the future technologies applicable in Europe

Expected results of the support:

1. New direction of IT development programs
2. Increased technical capacity to UTM/FabLab by providing new machines to develop new directions of activities
3. Development of new operations and services for FabLab/Tekwill
4. Capacity development of TUM staff
5. Min 100 students/annually benefit of the performant equipment
6. Min 200 students per year benefit of extracurricular activities
7. Awareness raised among the entrepreneurs
8. Min 2 potential partnerships with private sector enabled on green technologies.

Documents that prove the need of implementing Technologies within the PowerTech Concept (sustainable, renewable and green energy production):

1. The National Development Strategy “Moldova-2030” increasing the number of enterprises motivated to implement innovations, to ensure high productivity and competitive export-oriented production.
2. The National Program for Energy Efficiency (PNEE) of the Republic of Moldova 2011-2020 provides for 2020 by reducing energy consumption by 20%, increasing energy efficiency by 20%, reducing gas emissions by 20%.
3. Priorities and strategic directions approved by Government Decision no. 381/2019. Strategic direction: Innovative materials, technologies and products. Strategic direction: Safe, clean and efficient energy.

For the creation of the laboratory, we have worked together with TUM professors from IT and Energy sector.

Here are several potential priority directions proposed with the relevance towards FabLab and convergence of Tech and Energy: Here are several potential priority directions proposed with the relevance towards FabLab and convergence of Tech and Energy:

Nr.	Directions of research	Core and importance of the problem	Relevance to merging Tech to non-Tech within FabLab and Tekwill
1.	Special electromechanical converters	<p>Electric generators provide 98% of all electricity produced worldwide, with the presence of both conventional power plants (thermal or nuclear) and renewable energy sources (wind, water).</p> <p>Electric motors are the main consumer of all electricity produced (about 60-70% globally) and are used to set in motion production lines, pumps, fans, computer drivers, drones, robots, electric vehicles, ships. , lifting-lowering machines, household techniques (vacuum cleaners, refrigerators, washing machines...), are used in aviation and cosmonautics, military equipment.</p> <p>Thus, in this group we can identify:</p> <ul style="list-style-type: none"> • Special electromechanical converters (generators and electric motors) with low power losses for the efficient conversion of mechanical energy into electrical energy and vice versa; • Synchronous machines with permanent low speed magnets for wind turbines or electric vehicles; • Asynchronous machines with increased number of phases ($m > 3$) with a higher degree of reliability for autonomous propulsion systems (submarine robots, electric vehicles); • Electric machines with axial air gap and disc rotor integrated directly into the working machine; 	<p>Continuing education courses for specialists from electrical engineering enterprises and teachers in specialized and vocational technical education.</p> <p>Optimal selection of the electric drive motor according to the type and load diagram of the working machine.</p> <p>By providing access to new equipment on one hand we provide access to new technologies, and convergence of potential startups and ideas linking Tech and power supply industry</p>

		<ul style="list-style-type: none"> • Variable Reluctance electric machines with advanced reliability and energy efficiency; • Direct current machines without brushes and mechanical contacts (BLDC). 	
2.	Advanced electromechanical systems for driving, energy efficiency and automation of industrial technological processes	<p>Electromechanical systems consisting of electric motors, electronic power converters, microcontrollers, sensors and transducers, programmable control units (PC, PLC programmable controllers) are the main means for starting according to a certain algorithm, reducing electricity consumption (most commonly by 30-40%, but there are also cases by 80-90%) and the automation of technological production lines with increased productivity and the required quality level.</p> <p>Automated electromechanical systems make extensive use of digital information technologies to control a smart plant (Industry 4.0 platform). For example, a wastewater treatment plant contains several thousand electric motors with a total capacity of about 2 MW that set in motion in time the installations for pumping, mixing, dosing, disposal of solid waste, etc. All these electric motors are powered and regulated by electronic power converters, controlled with local and central PLCs and supervised by a SCADA system.</p> <p>Similar automated production systems are implemented by large local producers (Franzeluta, Vitanta, Alba, Tobacco-Chisinau, Bucuria, modern wineries, etc.).</p>	<p>Training for real sector specialists to digitize automated technological power generation lines based on the Industry 4.0 platform.</p>

<p>3.</p>	<p>High-performance electric traction systems for urban passenger vehicles (VUPs)</p>	<p>The development of urban passenger transport (electric buses, trolleybuses, trams) with high-performance electric traction systems allows the essential reduction of the level of environmental pollution and energy consumption. Operation in permanent transient modes (starting, braking, acceleration / deceleration) requires the endowment of VUP traction systems with special electric motors and electronic traction converters for smooth motion regulation. This allows a 30-40% reduction in electricity consumption compared to rheostatic control systems.</p> <p>Modern electric traction systems use very fast and precise control algorithms, such as vector control methods or with direct torque control, implemented in the programming of converter microcontrollers.</p> <p>The electronic control system of the VUP traction converter performs a lot of auxiliary functions related to GPS positioning, door and passenger control, microclimate in the vehicle, etc. Mandatory for VUP traction electrical systems is the use of mechanical braking energy in electrical energy and its recovery in the electrical network or recharging the battery.</p>	
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<p>4.</p>	<p>Electromechanical propulsion systems for electric cars, submarine robots, drones</p>	<p>European environmental policies envisage a reduction in greenhouse gas (GHG) emissions from land transport twice by 2030 and, to zero practice, by 2050. Consequently, the development of electric (EV) and hybrid vehicles (VEH) is a priority in the EU and must be properly developed in the Republic of Moldova.</p> <p>Current VE topologies are based on traction from an electric motor (single-axle) or two-motor (2-axle), but the most efficient is the "motor-wheel" topology, when each wheel is embedded one electric motor, which allows individual control of each wheel and maximum efficiency of VE energy flows. For these autonomous propulsion systems are recommended electric motors with disc rotor, with variable reluctance, with permanent magnets, with increased number of poles and increased phases.</p>	<p>Training courses for specialists in the maintenance of electric and hybrid cars</p> <p>Establishment of the TUM student team for the creation, development, testing (based on FabLab) of an electric car and participation in international competitions such as Formula Student</p>
<p>5.</p>	<p>Renewable energy sources (RES)</p>	<p>The global "Decarbonization" policy places a strong emphasis on moving from generating electricity from fossil to renewable sources. Every renewable source currently used requires a whole system of conversions and analysis.</p> <p>The systems for converting running water (hydro), biomass, wind and solar energy into electricity are those that are feasible to use in the Republic of Moldova. On the other hand, the Republic of Moldova, having no fossil sources on its territory, can rely on renewable sources to increase the country's energy security.</p> <p>The use of RES is related to the efficient conversion of mechanical and electrical energy with the help of specific automated electromechanical systems, the study of wind, solar, hydraulic potential, etc., the elaboration of calculation methods (sizing) of the respective power stations.</p>	<p>Specialization courses in the field of renewable energy sources for specialties in the real sector</p> <p>Trainings for employees of local public authorities refer to the use of the potential local RES</p>

<p>6.</p>	<p>Electricity storage systems</p>	<p>In order to impose a European and global "Decarbonisation" policy, reliable and sustainable energy systems need to be formed. The disadvantage of renewable energy sources (sun, wind, water) is the stochastic variation of the developed power. Mitigating the disadvantages of renewable sources will be done with the development of energy storage systems.</p> <p>Another need for storage systems is to ensure the quality of electricity (UPS), cutting load peaks, and ensuring high current short-term loads (ultra-fast charging of electric vehicles). The most advanced and widely used electricity storage systems are lithium-based batteries.</p> <p>So a sustainable and modern energy system would include connecting microgenerators to the public grid, storing energy for efficient management and efficient use of energy on load.</p>	<p>Training on the creation of complex systems for energy storage in order to ensure the autonomous operation of both large and small enterprises and the power system with smart modules (smartgrid)</p>
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