



Contract Number: 2009/226-599 / Broj ugovora: 2009/226-599

Project Name: *Networking and Capacity Building of environmental NGOs to Increase Energy Efficiency and Renewable Sources of Energy in Western Balkans* / Naziv projekta: *Umrežavanje i jačanje kapaciteta udruga za zaštitu okoliša s ciljem povećanja energetske učinkovitosti i većeg korištenja obnovljivih izvora energije u Jugoistočnoj Europi*

**INVITATION TO TENDER FOR SERVICE CONTRACT UNDER THE
NEGOTIATED PROCEDURE**
(POZIV ZA PODNOŠENJE PONUDE ZA UGOVARANJE USLUGA U SKLOPU
PROCEDURA PREGOVARANJA)

**DESIGN AND INSTALLATION OF
THE RENEWABLE ENERGY SYSTEM (PHOTOVOLTAIC AND WIND)
FOR ELECTRICITY PRODUCTION AND EDUCATIONAL PURPOSES
IN THE EDUCATIONAL CENTER "SOLAR ACADEMY"
ON ISLAND SHOLTA, CROATIA**

Tender ref: 05-02-2010. / Referenca natječaja: 05-02-2010.

General description

Zelena akcija (Friends of the Earth Croatia), major Croatian environmental NGO won a grant from the EU (Contract Number: 2009/226-599) within which we have 16.990,00 EUR (free of V.A.T.) for a service contract for the delivery of the renewable energy system based on combined photovoltaic and wind energy sources. Delivery shall include design, purchase, installation, testing and training of seminar participants and our staff. System shall be installed in our educational centre "Solar Academy" on island Sholta near Split. System, in addition to the purpose of supplying part of our electricity needs on site, will have strong educational purpose. We estimate that over next five years system will be demonstrated to cca 1000 participants of our seminars and workshops on the topic of renewable energy and sustainable development, coming from wide variety of stakeholders, not just from Croatia, but from the region of South East Europe. / Zelena akcija (FoECroatia), najveća Hrvatska okolišna organizacija civilnog društva, dobila je novčanu potporu od EU (Broj ugovora: 2009/226-599) u iznosu od 16,990,00 Eura (bez PDV-a) za ugovaranje usluge instaliranja sustava za korištenje obnovljivih izvora energije temeljenih na solarnim ćelijama i maloj vjetro elektrani. Instaliranje uključuje projektiranje, nabavu, instalaciju, testiranje i obuku polaznika seminara i našeg osoblja. Sistem će se instalirati u našem edukativnom centru „Solarna akademija“ na otoku Šolti kraj Splita. Sistem će, uz primarnu edukativnu svrhu imati i svrhu djelomičnog snabdijevanja naših potreba za el. energijom u objektu. Procijenjujemo da bi tijekom sljedećih 5 godina sistem bio prezentiran blizu tisuću sudionika na našim seminarima i radionicama na temu obnovljivih izvora energije, iz raznih zemalja Europe i regije.



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Technical characteristics

System, delivering on 230V/50 Hz output voltage, should be based on photovoltaic (min 1kW, preferably 1,5 or more kW) and wind (cca 600 W) generators, and should be designed as "stand alone" system with battery capacity of cca 500 Ah, but with the connection to existing electricity grid, as production will cover just a part of our needs when facility is accommodating large educational events, and production during months when facility is not in use, should be, in future largely delivered to the grid. System should be designed in a manner that it could be easily upgraded for future increase in PV and wind (up to total 5kW) generators connected, and battery capacity increased.

Site description

System will be installed on the roof of the workshop building within the facility, which is a solid concrete ground floor only building (10*15 m area) with roof facing near straight south/north direction (roof high point at 7,60 m). Building is at the road, near the top of the 270m high hill, 2 km from the town Grohote. Island Sholta is connected with half hour ferry line with Split. (For photo documentation see Annex 1.)

Existing electricity line (leading to 30 m distant connection to the grid) on which possible connection point exists is cca 10 m from the building (in total some 30 m from planned place for control elements of the system), so some cable lying works should be envisaged.

Timetable

Final assembly should be undertaken during seminar for our staff and representatives from 20 environmental organizations from whole South East Europe region in June 2011.

Tender submission deadline	17 th January 2011.
Visit to the site, final design	1 st March 2011
Major components delivered to the site and the start of installation	1 st May 2011.
Final installation and education on site	July 2011.

Additional requirements



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Please note the following:

- The equipment shall comply with the technical requirements specified in Annex II. They are compulsory as a minimum standard and will be the only basis for the evaluators to assess the technical compliance of the equipment presented in the offers.
- The equipment should originate from a EU or a IPA country¹
- The price of your offer must be expressed in Kuna without VAT². Selected bidder should be able to submit an invoice free of VAT after delivery is completed.
- The sole award criterion will be the price. The contract will be awarded to the lowest technically compliant tender.
- List of references for previous work on installation of similar systems
- CV of the expert who will conduct the training (required training consists of 2 one day trainings on the design, installation and the system in English, in addition to the necessary consultations during warranty period)
- Defined warranty period for the system

Terms of payment

- Upon signing the contract first instalment in the amount of 75% of total contract value will be paid. Final instalment in the amount of 25% will be made after delivery is completed and invoice is received.

Discounts on equipment and installation welcomed

¹ The Supplier shall present a certificate of origin to the Orderer of Supplies no later than when the first invoice is presented. / Dobavljač će ispostaviti Naručitelju uvjerenje o podrijetlu, ne kasnije od ispostave prve fakture

² This procurement is VAT exempt according to the Official Gazette no. 110/2003. Contract that proves our VAT exemption will be given to the supplier with the payment of the supplies. / Ova nabava je izuzeta od plaćanja PDV-a prema Naputku iz NN 110/2003 i NN 42./2008. Ugovor kojim smo izuzeti od plaćanja PDV-a biti će dan dobavljaču pri plaćanju robe. Stoga račun treba biti izdat bez PDV-a.



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As the system and its components will be installed in our educational centre where over next five years we expect around 1000 participants in our educational activities, we will highly appreciate discounts in equipment and installation prices. We are, of course, open to provide visible space near the installed system for a suppliers promotional banners or materials.

If you have any questions please contact directly Mr. Toni Vidan +385 98 385-650, or send an email to: aleksandra@zelena-akcija.hr

Please send your offer duly signed and stamped by mail, no later than 17th January 2011. to the following address and underline on the envelope:

“Ne otvarati prije sastanka evaluacijske komisije” za Tender ref. nr. 05-02-2010

Zelena Akcija
Frankopanska 1
10000 Zagreb

Attachments:

- Annex 1: Photo documentation on location site
- Annex 2: Technical Specifications
- Annex 3: Tenderer's declaration for Supply Contract Under Negotiated Procedure

Annex 1. Photo documentation on location site



Photo nr.1. View from the North-West



Photo nr.2. View from the North-East

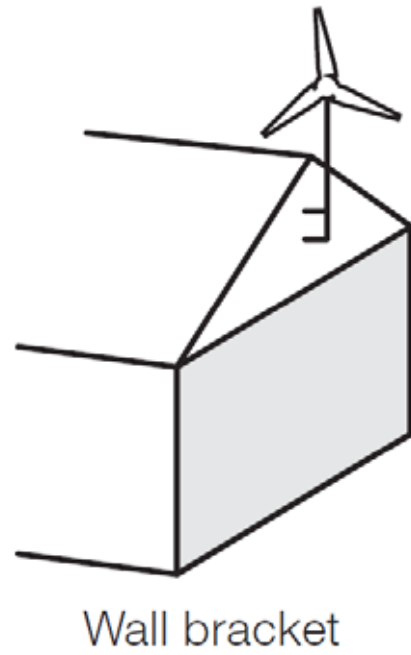


Photo nr.3.View on the west wall where the wind turbine should be installed as presented on the illustration



Photo nr.4. View on the south side of the roof and the west wall



Photo nr.5. Interior view on the west wall of the building. Instalation of the indoor elements of the system should be placed against the wall in logical and „easy to understand“ manner.

TECHNICAL SPECIFICATIONS

Data contained in this document are considered as being complete enough for preparation of proposal. All additional information needed, the Bidder shall collect during the site visit, after selection.

1. Codes and Standards

Material or equipment supplied according to this Invitation to Tender shall comply with the latest edition of the applicable references listed as follows:

- IEC 61000-4-2 Electromagnetic Compatibility (EMC),
- IEC 61000-4-3 Electromagnetic Compatibility (EMC),
- IEC 61000-4-4 Electromagnetic Compatibility (EMC),
- IEC 60904-1 to IEC 60904-10 Photovoltaic devices,
- IEC 61427 Secondary cells and batteries for photovoltaic energy systems (PVES) - General requirements and methods of test
- IEC/TS 62257-1 to IEC/TS 62257-7 Recommendations for small renewable energy and hybrid systems for rural electrification
- HRN Catalog of Croatian standards.

It shall be Bidder's responsibility to be, or to become, knowledgeable of the requirements of the referenced Codes and Standards, as well as the Codes and Standards of the country of Croatia.

All the delivered equipment must be labeled with "CE" conformity marks, also for every piece of equipment, declaration of conformity shall be included. Main equipment (listed under "2. System Description") documents shall also be written in Croatian language.

2. System Description

The proposed system shall be hybrid system, accommodating PV and wind generator sub-systems. Major equipment/devices are listed as follows:

1. PV modules,
2. Junction boxes (including fuses, diodes, etc.),
3. DC main switch,
4. Lightning protection/earthing/grounding/surge protection devices,
5. Charge controller,
6. Batteries,
7. Inverter,
8. AC switch disconnect switches,
9. Connections, DC and AC power cables/wiring,
10. Electrical cabinet,
11. Measuring instruments, local indication panel and web-based monitoring system,
12. Wind turbine generator.

The system shall be designed, delivered and installed in such a way to safely supply electrical energy (at least partially) to typical loads at "Solar Academy" center. These loads are: 3 refrigerators, 1 deep freezer, water pump, lighting, 1 dish washer machine, several laptop charging and small tools (such as drilling machine)

utilizations. The estimated available roof area is 86,6 m² (one half of 10 m X 15 m sloped at 30°), which is obviously too small to accommodate enough PV panels to supply enough energy for all the loads. So, energy from the batteries shall be consumed only when “low power” load is applied. So, there shall be at least two modes of operation: load is powered from the batteries (through inverter) and load is powered from the power grid (disconnected from inverter, but battery charging circuit is active). This is why two AC disconnect switches are needed: the first one that shall connect the load to inverter (at the same time the other AC disconnect switch is disconnected) and the second one that shall connect the load to power grid (at the same time the other AC disconnect switch is disconnected). System must be implemented in such a way to ensure that at least one of the AC disconnect switches is disconnected (“open”) at any time instant. That would typically happen during the summertime when the center is populated and energy consumption is high.

There is an additional request on inverter: it shall be of “grid connected” type. The reason for that is Investor’s intention to adapt the proposed system and fully establish “on grid” hybrid system. That shall happen in near future (couple of years) and some other minor changes shall be required. The Bidder shall design proposed system in such a way to minimize these system changes.

3. Equipment Requirements

Major equipment/devices requirements are listed as follows:

3.1. PV modules

PV modules shall be manufactured from mono-crystalline cell type. Module output shall be suitable to charge 24 VDC batteries. Modules shall be certified according to IEC61215 or IEC61646. “TUF-PROOF” marked modules are preferred. PV modules shall be purchased with all the installation and interconnection material included. The Bidder shall declare a guarantee period for 90% of the nominal power rating. The Bidders shall install minimum of 1,0 kW nominal power of PV modules, preferably 1,5 kW or more, and easily expandable up to cca 4 kW in the future.

3.2. DC main switch

In the event of faults or in the order to carry out maintenance and repair work, it must be possible to isolate the inverter from the PV and wind turbine generators. DC main switch is used for that role. According to the IEC 60364-7-712 standard, an accessible load switch is required between the PV generator and inverter. The DC switch shall be installed directly before the inverter (it shall not be integral part of inverter). It shall be rated for the maximum open-circuit voltage of the generators (at -10 °C) and for the maximum generators’ current (short-circuit current under STC). The Bidder shall quote it based on its own calculations/estimates taking into account all the future system enlargements.

3.3. Lightning protection/earthing/grounding/surge protection devices

Generally, the following applies: PV systems do not increase the risk of buildings being struck by lightning. Therefore, there is no need for an additional lightning protection system. However, there shall be also wind turbine sub-system installed that shall include exposed metal tower/console. It is the Bidder responsibility to properly design/deliver/install quoted protection devices accord to actual Croatian standards (considering lightning and overvoltage protection classes and all other applicable requirements).

3.4. Charge controller

The standard charge controller tasks are as follows: optimum charge to the batteries, overcharge protection, preventing unwanted discharging, deep discharge protection and providing information on the state of the charge of the batteries. There are two more tasks for the charge controller of this system, these are: besides PV sub-system, controller shall accommodate wind turbine sub-system and during the wintertime season controller shall supply energy to battery heater (supplied by Contractor) and panic lights. In order to get the most possible power from the PV array, a maximum power point tracker technique (MPPT) shall be used. The Bidder shall quote it based on its own calculations/estimates taking into account all the future system enlargements.

3.5. Batteries

Sealed (lead-acid gel), maintenance free, 24 VDC battery bank shall be quoted. Estimated minimum "Ahs" are 500 Ah. The Bidder shall make his own calculation taking into account all the future system enlargements. The quotation shall be based on the higher "Ah" value. Batteries shall be certified according to IEC 896-2.

3.6. Inverter

Three-phase inverter shall be of "grid connected" type. Input voltage of 24 VDC, output voltage of 230 VAC, 50 Hz. Inverter shall be designed oversized, taking into account the power of total number and type of all the PV modules and wind turbine generators installed at the site. Estimated power is 5 kW, but the Bidder shall make his own calculation taking into account all the future system enlargements. The quotation shall be based on the higher power value. Inverter shall be certified according to IEC 61727, IEC 62116 and IEC 60364.

3.7. AC disconnect switches

The AC disconnect switches must be double-pole, clearly labeled and lockable in the "OFF" position only. The Bidder shall quote them based on its own calculations/estimates taking into account all the future system enlargements. They shall be quoted/designed based on standard manufacturer practice.

3.8. Connections, DC and AC power cables/wiring

Preferable connection type is with screw terminals, but all other types (especially plug connectors) shall be considered if they have transfer resistance of less than 5 miliohms. PVC-sheathed cable (with NYM or NYY codes) can be used for main DC cable, but they need to be UV protected. Cable type "NHMH-J" shall be preferred due to the environmental reasons. Individual screened cables for positive and negative branches are recommended. For AC connection cable, a five-pole cable shall be used; usual protected cables of type NYM, NYY or NYCWY can be used. All the cables shall be laid in corresponding cable trays. The Bidder shall quote them based on its own calculations/estimates taking into account all the future system enlargements. They shall be quoted/designed based on standard manufacturer practice.

3.9. Electrical cabinet

It shall be lockable and used to accommodate AC disconnect switches, earth leakage circuit breakers and other required protection equipment. It shall be quoted/designed based on standard manufacturer practice. Also, the Bidder shall quote it based on its own calculations/estimates taking into account all the future system enlargements.

3.10. Measuring instruments, local indication panel and web-based monitoring system

Voltage, current, power and energy meters shall be supplied for PV and wind turbine sub-systems. All the measurement values shall be locally (local LCD panel on the site) and remotely (web-based) displayed for both sub-systems separately and totalized. Web-based data monitoring system shall also include hybrid system statuses (such as alarms, security and malfunction warnings) and establish data transmission to “Friends of the Earth – Croatia” office in Zagreb. Draft data communication standard IEC62350 shall be used. It shall be powered by UPS.

3.11. Wind turbine generator

A small wind turbine generator rated to produce cca 600 watts (at 24 VDC) shall be installed. The wind turbine shall be equipped with its own electronic controller, installation tower and auxiliary material. Strongly preferred model is „Ampair 600-24“ with AO6 MOO wall mount kit produced by Ampair (www.ampair.com)

4. General Requirements

It is the responsibility of the Bidder to examine the specifications and requirements in this document. Any errors or omissions shall not be the reason for relieving the Bidder from proposing a working solution. Even though this is “turn key” type of project, Investor is entitled to approve all the equipment prior to corresponding ordering procedure. The Contractor shall deliver equipment whose minimum quality is mutually agreed and defined by the Contract.

Bidder may, in addition to the base bid, submit alternate proposals for the equipment or systems that they think shall fulfill the specified requirements more efficiently or more economically than those set forth in the specification. However, any and all alternate proposals shall be clearly identified, with all supporting technical documentation. The alternates shall be referenced to the specific section of the specification that is applicable. Undocumented alternates are subject to rejection.

All the outdoor metal structures will be exposed to harsh weather, so they must be made of resistive materials such as stainless steel. Also, all the outdoor equipment/structures must be adapted to high winds (wind zone #3). Special attention shall be given to roof static/dynamic loads and battery bank placement/installation (considering its weight).

The required documentation in Croatian language from the Bidder is as follows:

- a) Calculations of yearly system production for both sub-systems (having in mind site conditions such as shading and surrounding objects), PV sub-system production shall be calculated according to “Solar Radiation Handbook of Croatia” issued by Energy Institute “Hrvoje Požar”, wind turbine sub-system production shall be calculated according to “Mean Annual Wind Speed Map of Croatia” issued by “Meteorological and Hydrological Service of Croatia”, for this location it is about 4 m/s (10 m above ground level) – **delivered with the proposal by all Bidders**;
- b) “for construction” documentation– shall be delivered by rewarded Contractor only; subject to Investor’s approval;
- c) “as built” documentation – shall be delivered by rewarded Contractor only; subject to Investor’s approval;
- d) operating and maintenance manual – shall be delivered by rewarded Contractor only; subject to Investor’s approval.

Tenderer's declaration for Supply Contract Under Negotiated Procedure¹

/ za ugovaranje nabave u sklopu procedura pregovaranja

<Name & address of Orderer of Supplies> / <Naziv i adresa Naručitelja nabave>

Our ref:... / Vaš broj:...

Dear Mr/Mrs..., / Poštovani gospodine/gospođo...,

Subject: TENDER DECLARATION LETTER FOR <Title of the Contract> /

Predmet: ... PODNOŠENJE PONUDE ZA <Naziv ugovora>

In response to your letter of invitation to tender for the above contract, we hereby declare that: / Kao odgovor na Vaš poziv na natječaj za gore naveden ugovor, izjavljujemo da:

We are not in any of the situations excluding us from participating in contracts which are listed in Section 2.3.3 of the Practical Guide to contract procedures financed from the General Budget of the European Communities in the context of external actions (available from the following Internet address: / Nismo u nijednoj situaciji koja bi nas mogla isključiti iz sudjelovanja u ugovorima, a koje su navedene u Odjeljku 2.3.3 Praktičnog vodiča za ugovorne postupke koji se financiraju iz proračuna Europskih zajednica u kontekstu vanjskih aktivnosti (dostupno na slijedećoj Internet adresi:

http://europa.eu.int/comm/europeaid/index_en.htm):

“Candidates or tenderers will be excluded from participation in a procurement procedure if: / Kandidati ili ponuđači će biti isključeni iz učešća u proceduri nabave ako su:

- (a) they are bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations; / bankrotirali ili su zatvoreni, ako su pod sudskom upravom, ako su napravili aranžman sa kreditorima, ili su suspendirali poslovne aktivnosti, ili su predmet sudskog postupka zbog tih stvari, ili se nalaze u bilo kojoj sličnoj situaciji koja proizilazi iz slične procedure utvrđene domaćim zakonima i propisima;*
- (b) they have been convicted of an offence concerning their professional conduct by a judgment which has the force of res judicata; / osuđeni zbog kaznenog djela kojim je prekršeno profesionalno postupanje presudom sa snagom res judicata;*
- (c) they have been guilty of grave professional misconduct proven by any means which the Contracting Authority can justify; / proglašeni krivim zbog teškog kršenja poslovanja dokazivog svim sredstvima koja ugovorni organ može opravdati;*

¹ This is a template. Please, adapt it according to your needs whenever necessary / Ovo je obrazac. Molimo, prilagodite ga prema Vašim potrebama.

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- (d) *they have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the Contracting Authority or those of the country where the contract is to be performed;* / ako nisu ispunili obaveze u vezi s plaćanjem doprinosa ili poreza u skladu sa zakonskim odredbama zemlje u kojoj su uspostavljeni ili zakonskim odredbama u zemlji ugovornog organa ili odredbama zemlje u kojoj će se ugovor provoditi;
- (e) *they have been the subject of a judgment which has the force of res judicata for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Communities' financial interests;* / ako je protiv njih donesena presuda sa snagom res judicata zbog prevare, korupcije, učešća u kriminalnoj organizaciji ili bilo kojoj drugoj nezakonitoj aktivnosti koja je štetna po financijske interese Zajednica;
- (f) *following another procurement procedure or grant award procedure financed by the Community budget, they have been declared to be in serious breach of contract for failure to comply with their contractual obligations*” / ako je ustanovljeno da su počinili teško kršenje ugovora nepoštivanjem ugovorenih obaveza, zbog primjene druge procedure nabavke ili procedure dodjele granta koji se financira iz proračuna Zajednice.

In the event that our tender is successful, we undertake to provide the proof usual under the law of the country in which we are established that we do not fall into the above-mentioned situations². / U slučaju da naša ponuda bude uspješna, mi ćemo osigurati dokaze prema zakonu države u kojoj imamo sjedište, da nismo u gore navedenim situacijama²

Name and signature / Ime i potpis

² The Contracting Authority will accept, as satisfactory evidence that the tenderer is not in one of the situations described in (a), (b) or (e), production of a recent extract from the judicial record or, failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied. The Contracting Authority will accept, as satisfactory evidence that the tenderer is not in the situation described in (d), a recent certificate issued by the competent authority of the Member State concerned. Where no such certificate is issued in the country concerned, it may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or administrative authority, a notary or a qualified professional body in its country of origin or provenance. Depending on the national legislation of the country in which the tenderer or candidate is established, the above documents relate to legal persons and/or natural persons including, where considered necessary by the Contracting Authority, company directors or any person with powers of representation, decision-making or control in relation to the candidate or tenderer. /

Ugovorni organ će prihvatiti kao zadovoljavajući dokaz da se kandidat ili ponuđač ne nalazi niti u jednoj situaciji opisanoj pod tačkom (a), (b) ili (e), izvod novijeg datuma iz sudske evidencije, ili umjesto toga, odgovarajući dokument također novijeg datuma kojeg je izdao sudski ili organ uprave u zemlji porijekla kojim se dokazuje da su ti uvjeti ispunjeni. Ugovorni organ će prihvatiti kao zadovoljavajući dokaz da se kandidat ili ponuđač ne nalazi u situaciji opisanoj u točki (d) uvjerenje novijeg datuma koje je izdao nadležni organ zemlje članice. Kada takvo uvjerenje nije izdato u određenoj zemlji, umjesto njega interesna strana može dati zakletvu ili svečanu izjavu pred sudskim ili organom uprave, pred javnim bilježnikom ili kvalificiranom stručnom institucijom u zemlji njegovog porijekla ili provenijencije. Ovisno o domaćem zakonodavstvu koje je na snazi u zemlji u kojoj je sjedište ponuđača ili kandidata, gore spomenuti dokumenti se odnose na pravne odnosno na fizičke osobe, uključujući, kada to ugovorni organ smatra potrebnim, i direktore firmi ili bilo koju osobu koja ima ovlaštenje vršiti zastupanje, odlučivanje ili kontrolu u vezi s kandidatom ili ponuđačem.