

# **SPECIFICATIONS FOR**

## **The acquisition of a Forward Osmosis- Membrane distillation desalination Unit**

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## **CHAPTER I: CONDITIONS**

### **ARTICLE 1: OBJECT**

The purpose of this consultation is the acquisition of a pilot unit of desalination using forward osmosis process of brackish water. This unit will be installed in the Euromed University of Fez. This pilot unit is part of a research project and will subsequently be used to analyze the performance and profitability of the project.

### **ARTICLE 2: REFERENCE DOCUMENTS**

#### **2.1 Law**

The contract resulting from this tender will be subject to Moroccan law.

Any disagreement between IRESEN and the Provider shall be settled amicably by cooperation between the two parties; otherwise, litigation will be submitted to the competent court in Rabat unless specific clauses figure in the selling engagement of the supplier, in which case they shall prevail.

#### **2.2 Contractual Documents**

The obligation of the supplier for the performance of works that are the subject of this Tender will result in the whole constituent pieces of the engagement designated as bellow:

- \*The contract concluded with its annexes and amendments
- \*This Document
- \*The orders
- \*The submission and, where necessary annexes

After its notification, the engagement will be able to be modified only by amendments or letter exchanges accepted by both contracting sides.

### **ARTICLE 3: DEADLINE AND PLACE OF SUBMISSION OF TENDER**

Tenders must be submitted according to conditions and delays planned by these specifications to the purchasing department by **December 16<sup>th</sup>, 2020 before 12 PM GMT.**

**Foreign suppliers must establish a price quotation according to the Incoterm DAP University Euro-Méditerranéenne in Fès, disaggregating the cost of transporting the equipment.**

**Local suppliers must be able to submit a proposal including the shipping. This latter is their responsibility to the delivery place: University Euro-Méditerranéenne in Fès.**

**As an institute, IRESEN benefits from the UNESCO exemption of customs duties. So, Moroccan companies can submit a proposal without customs duties.**

#### **ARTICLE 4: SUBMISSION FOLDER**

Any tenderer is required to present a folder of submission containing:

##### **4.1. ADMINISTRATIVE FILE:**

This folder must contain:

- A declaration on honor
- Excerpt of K-BIS or the certificate of registration in the commercial register for persons subject to the obligation to register in accordance with the legislation in force
- A certificate or its certified copy of the original issued less than a year ago by the competent administration of the place of taxation certifying that the competitor is in a regular tax situation. This certificate must mention the activity under which the competitor is taxed;
- Company presentation
- The document or documents justifying the powers conferred on the person acting on behalf of the tenderer
- These specifications initialed, signed and sealed

##### **4.2. TECHNICAL OFFER**

The supplier's technical offer must comply with, or exceed, the specifications described in article 6 "Tasks and deliverables".

The technical offer must also include the references of the tenderer.

##### **4.3. FINANCIAL OFFER**

The detailed price schedule must be clearly specified.

The offer presented by each tenderer is put in a signed and sealed envelope. This folder contains three (03) envelopes:

- The first envelope: the administrative file. This envelope must be sealed and show, in addition to the information on the envelope, the mention "Administrative file".
- The second envelope: contains the technical offer. This envelope must be sealed and bear, in addition to the indications on the envelope, the words "Technical Offer".
- The third envelope: contains the tenderer's financial offer. This envelope must be sealed and bear, in addition to the information on the envelope, the words "Financial Offer".

## ARTICLE 5: PROCEDURE FOR AWARDING

This consultation will be sold following the needs of IRESEN. The supplier will be chosen based on the equipment's quality, the respect of the formulated needs in article 6 and the financial offer;

## CHAPITRE II: SCOPE OF DELIVERY

### ARTICLE 6: CHARACTERISTICS AND TECHNICAL SPECIFICATIONS

- (4) storage tanks: Forward osmosis (FO) feed solution tank, brine storage tank, draw solution tank shared between the FO and membrane distillation (MD), deionized (DI) water tank on the permeate side of the MD module.
- (1) FO cell.
- (30) TFC FO membranes.
- Draw solution: 0.5 to 1 mol/L MgCl<sub>2</sub>
- (4) Circulation pumps: feed solution, concentrated draw solution, diluted draw solution and DI water on the MD side.
- (1) Membrane distillation module.
- (30) PTFE microporous membrane distillation membranes.
- An electrical power supply for the MD module, to allow independent operation from the CSP unit and to provide an energy backup for stable operation.
- Anti fouling/corrosion cleaning equipment/chemicals.

The technical specifications are mentioned in table 1.

*Table 1: Technical specifications of the solar field*

Items	Specifications
MD Membrane area	6 m <sup>2</sup>
FO membrane area	2 m <sup>2</sup>
MD membrane material and configuration	PTFE, Hollow fiber or Spiral Wound
FO membrane material and configuration	TFC, Hollow Fiber or plate and frame
Flow rate	Up to 2.64 GPM
FO operating temperature	25°C to 35°C
Tanks	<0.5 m <sup>3</sup>
Tanks material	Polyethylene
Sensors	Conductivity Pressure Temperature Flowrate Water flux (MD; FO)
MD operating temperature hot channel	65 to 70°C

MD operating temperature cold channel	20°C
MD input power	Residual energy from CSP plant (~16 to 18 kWth ) / electrical power supply
Water production flow rate	Up to 28 L/h

The services to be provided by the manufacturer are:

- Assembly, installation and commissioning of the plant
- Training for operators
- Maintenance and instruction manuals
- Packaging ocean freight shipment
- Shipping and transportation
- Periodic inspection

#### **ARTICLE 7: WARRANTY PERIOD**

The equipment and all accessories are warranted on the university facilities in Fès for **two years** starting from the end of installation, including spare parts and labor;

##### Spare parts:

The system should be delivered with spare parts deemed necessary for use of at least 1 year.

#### **ARTICLE 8: MAINTENANCE**

The offer must contain 3 years maintenance contract after the warranty period, containing:

- Annual Preventive Maintenance Visit
- Spare parts
- Telephonic support and advice
- Annual software update
- Travel

All services and parts mentioned above will have to be delivered in the university facilities in Fès (transport and accommodation costs on the supplier's charges).

During the warranty period and maintenance engagement, the whole fees will be charged on the supplier or its representative and include supply of spare parts, labor and transportation fees, accommodation and living expenses.

#### **ARTICLE 9: INSTALLATION AND COMMISSIONING**

All the elements required for the installation of the equipment and for its commissioning must be provided by the supplier. Installation, commissioning, good performance and training must be carried out within the deadlines mentioned in Article 12 of these specifications, with the consequences mentioned in case of non-respect of deadlines.

## **ARTICLE 10: TRAINING**

The training must be provided by the installation engineer in the University Euro-Méditerranéenne in Fès on the supplier's charges.

## **ARTICLE 11: TECHNICAL DOCUMENTATION**

The supplier commits to provide, upon delivery, all the necessary documentation for the use, repair and all the technical documentation of the system including the usage software in English, and if available, in French as well as all calibration certificates for all the components of the apparatus.

## **ARTICLE 12: TERMS AND EXECUTION CONDITIONS**

The equipment must be delivered within a maximum period of 3 months from receipt of the purchase order.

If the delivery delay is other than 3 months, it must be specified on the offer.

## **ARTICLE 13: LATE PENALTIES**

In case of exceeding the execution time specified in article 12, the supplier is liable to a penalty of 1‰ of the contract amount per day of late, with a maximum cumulative flat rate of 10% of the engagement amount, beyond which are applied dispositions of article 17.

## **ARTICLE 14: RECEPTION – VERIFICATION**

### **a) Verification**

The verification of the equipment subject of this order will take place in the university; they will be performed under the supervision of the project leader.

No delivery even if partial is accepted if the whole equipment does not respect the order form.

### **b) Reception**

The reception and installation of the device with all its components must be done within a period not exceeding one month (30 days).

The final acceptance will be pronounced with the university satisfaction according to the following points:

- Installation of the main equipment and its accessories
- Verification of the conformity of the whole equipment with the purchase order
- Training of the team staff

### **ARTICLE 15: PAYMENT CONDITIONS**

The payment will be made on 30 days end of month after receiving the invoice and the final acceptance receipt.

The Supplier must produce a commercial numbered invoice established in 03 copies signed, dated on letters written. It must indicate the references of the contract of the related order.

These invoices must be addressed to IRESEN's Accounting department, located at 16, Rue Amir Sidi Mohamed Souissi, Rabat-Morocco.

### **ARTICLE 16: HOLDBACK**

A 10% holdback is provided upon the purchase of equipment that will be released after the warranty period

### **ARTICLE 17: CONTRACT CANCELATION**

Regardless of expected cases of common Law, the Contract resulting from these specifications may be terminated with plain rights by IRESEN, with Recipient faults, and after formal notice by registered letter within a period of 20 days in the following cases:

- ▶ Fraudulent acts relating to the nature, the quality and reliability of the equipment and services covered by these specifications
- ▶ In case of exceeding the maximum flat rate of late penalties as indicated in article 13.

### **ARTICLE 18: RISKS INSURANCE**

The Supplier declares to be covered by a professional civil insurance against the risks that he incurs during his activity and throughout the duration of the execution of this contract. This insurance must cover all risks that encounter his staff at IRESEN. The Client reserves the right to request copies of the insurance policy or certificate of cover.