



## **Tender Documents**

Name of the Commercial Public Tender (hereinafter referred to as "Tender"):

**„Compressor unit“**

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## **A. INSTRUCTIONS FOR BIDDERS**

### **A.1 GENERAL INSTRUCTIONS**

#### **A.1.1 Identification of the Tender promulgator:**

Name of the organization: NAFTA a.s.  
COMPANY ID No.: 36 286 192  
VAT ID No.: SK2022146599  
Company registered office: Votrubova 1, 821 09 Bratislava  
Registered in: Commercial Register of the District Court Bratislava I,  
Section Sa, File No. 4837/B  
Country: the Slovak Republic  
Correspondence address: NAFTA a.s.  
Votrubova 1  
821 09 Bratislava  
Slovakia  
Contact person: Mr. Peter Kacarabčín  
E-mail: [Peter.Kacarabcin@nafta.sk](mailto:Peter.Kacarabcin@nafta.sk)  
Internet site: [www.nafta.sk](http://www.nafta.sk)

#### **A.1.2 Subject of the Tender:**

The subject of the Tender is delivery of compressor unit in accordance with technical specification (paragraph C of this document) and conditions set out in this document.

#### **A.1.3 Type of contract**

Purchase Contract.

#### **A.1.4 Place and date of delivery**

The place of delivery is the warehouse of NAFTA a.s., Plavecký Štvrtok 900, 900 68 Plavecký Štvrtok. (Incoterms 2000 – DDP Plavecký Štvrtok)

Requested date of delivery: February 2015

Commissioning and start-up: May 2015

#### **A.1.5 Evaluation of proposals**

The promulgator reserves the right to restrict the number of bidders after proposals are submitted and to invite the bidders determined in this way to individual negotiations about the contract terms and conditions.

The promulgator reserves the right to negotiate the proposal with the bidder in several consecutive rounds with the possibility to invite bidders to submit the updated price proposal after each round of negotiations.

In case of several rounds of negotiations, the promulgator shall notify bidders in advance that the price proposal they are going to submit shall be the final proposal.

**A.1.6 Explanation and communication**

Any communication and provision of information among the promulgator and bidders shall be carried out in writing or electronically. Address for written communication is provided in Point A.1.1 and e-mail address is [compressor.unit@nafta.sk](mailto:compressor.unit@nafta.sk).

**A.2 INSTRUCTIONS FOR THE PREPARATION OF THE PROPOSAL**

**A.2.1 Content of the proposal**

The submitted proposal shall contain the documents in the following order:

1. Name and precise address of the bidder, Company ID and contact data of the person authorized to act on behalf of the bidder in contractual relationships for further negotiation about the terms and conditions.
2. Cover letter with declaration of the fixed price and warranty period (filled form of Annex No.1).
3. Documents in accordance with paragraph B.1 Economical and financial competency
4. Documents in accordance with paragraph B.2 Technical competency
5. Quotation divided into following groups:
  - a) Compressor unit (complete package)
  - b) Spare parts for start-up
  - c) Spare parts for 2 years operation (for compressor and control system)
  - d) Transport costs to delivery place
  - e) Assumed price for precommissioning, commissioning, start-up, complete testing, and putting into operation (standard man day costs + assumed man days for each activity).
  - f) Operating costs (OPEX) for 1 year operation in design point (6000 hours)**
6. Requirement information to quotation
  - a) Driver
    - Requirements for electric power source
    - Influence (high frequency) to public electric grid
    - Performance curves (RPM, output power, efficiency...)
    - Initial power load
    - Max. RPM and max. power for the max. operational point
    - Min. allowable RPM and power for the min. operational point
    - **Performance in kW for the design point**
  - b) VFD data
    - Communication protocol between VFD and PLC
    - Technical parameters – nominal voltage and current
    - Influence VFD to power grid
  - c) Compressor

- Performance curve characteristic: **Q versus P1 (mil. Sm<sup>3</sup>/day) for P2 = 20 – 75 barg step 10 bar**
- Power requirements
- d) Generally
  - operation range according Annex No. 1
  - P&ID with description of components
  - Block diagram with the description of the control system connection, including the master system
  - basic dimension layout with description and location of components (not typical drawings only)
  - life time between general overhauls (approximately cost of the overhaul of the compressor)
  - list of spare parts for start-up and spare parts for 2 years operation (for compressor and control system)
  - warranty and after-warranty service for the compressor unit:
    - ✓ location of the nearest service provider
    - ✓ time necessary from reporting to the arrival of the technicians to the locality
    - ✓ time necessary for the arrival of the technicians at emergencies
    - ✓ price list of service works
    - ✓ oil consumption - penetration of the process gas in g/1000 m<sup>3</sup>
- e) Noise Emissions

The level of acoustic output of the unit L<sub>wA</sub> /dB (A)/. Please define these data in the 63 Hz - 8 000 Hz frequency band (the octave band).

#### **A.2.2 Execution of the proposal**

The proposal shall be executed for the entire subject of the Tender in the Slovak or Czech or English language.

The proposal shall be executed electronically in common format (.pdf, .xls, .doc, etc.)

The proposal shall be signed by the statutory body of the bidder in compliance with the extract from the Commercial Register or the person authorized for such acting. The original of the document proving authorization of the person to sign the proposal shall be a part of the proposal in such case.

#### **A.2.3 Validity of the proposal**

The minimum validity of the proposal shall be **by 31<sup>st</sup> October, 2014.**

#### **A.3 SUBMISSION OF PROPOSALS**

##### **A.3.1 Place and date of the proposal submission**

The proposals have to be delivered by e-mail to the address [compressor.unit@nafta.sk](mailto:compressor.unit@nafta.sk) by **6<sup>th</sup> August 2014 till 13:00 UTC.**

### **B. CONDITIONS OF PARTICIPATION**

#### **B.1 ECONOMIC AND FINANCIAL COMPETENCY**

Economic and financial competencies are being proved by the bidder by submission of the following documents and providing the following information:

1. Financial situation and declaration – positive reference of the bank institution,
2. Declaration of the statutory representative of the bidder that no bankruptcy order was issued as at the date of the Tender calling, that it is not in liquidation and has no tax arrears registered.

## **B.2 TECHNICAL COMPETENCY**

Technical competency shall be proved by the reference list of similar applications in past 3 years with presenting of company name for which the project was realized, locality, and year of putting into operation (compression of hydrogen or mixtures of hydrogen and natural gas)

## **C. TECHNICAL SPECIFICATION**

### **C.1 COMPRESSOR UNIT**

#### 1. Package

Each equipment necessary for operation of compressor unit should be installed on the one (1) skid with noise cover enclosure, which consists of two spaces (room for compressor and room for non-ex-proof electrical devices). Noise enclosure has to be ventilated.

#### 2. Driver

- electric motor
- VFD control unit:
  - Protection IP 20
  - EMC filter for industrial grid
  - Incoming line reactor
  - VFD has to be certified together with electric motor according to EN 60079 - 14
  - Situated in non-ex-proof part of noise enclosure

#### 3. Compressor

- it will be used for injection of the mixture of the natural gas and hydrogen for project Sun Storage and withdrawal of natural gas for later using
- compressor design preferable for injection in serial mode (optimal efficiency according operation points)
- vent silencer 75 dBa 20 m from nozzle
- used materials have to be resistant against hydrogen corrosion
- suction ball valve, discharge ball valve, blowdown valve (have to be automatic with emergency shutdown function), oil heater
- operation of the compressor has to have the possibility to be regulated on:
  - Suction pressure
  - Flow of injected gas mixture
  - Discharge pressure

4. Control system

Supply requirements:

- control system of PLC type - preferred manufacturer Allen-Bradley
- Cabinet located inside the other room - not in the same room as compressor. Rooms have to be separated with gas-proof barrier.
- HMI panel and control buttons for controlling of compressor unit placed on the cabinet door in English, **German** & Slovak language.
- power supply of control system 24VDC
- communication to remote control system (DCS / SCADA) via serial port RS232/RS485 with Modbus RTU or DF1 protocol support or Ethernet 10/100 TP port with Modbus TCP or Ethernet/IP protocol support
- second communication port RS232 or USB for maintenance/programming purpose

5. Gas coolers

- Gas/air design, max noise 75 dBa fan 1 m from outside side surface.
- Used materials have to be resistant against hydrogen corrosion.

6. By-pass system

- hardware and software for electric by pas system (for loading only)
- safety blow down system

7. Oil penetration

- The gas compressor has to be equipped by the follows scrubbers:
  - Oil scrubber between the first and second stage
  - Discharge scrubber with coalescing cartridges. This scrubber has to be designed for removing 99% of the entrained mist particles 10 microns and larger in size at the design operating condition

8. Special tools

- List of special tools if necessary (say alignment ect.)

9. Outdoor enclosure .

- outdoor enclosure for 75 dBa one (1) meter from enclosure wall

10. Gas and fire detection system

- **Part of supply**

11. Extinguishing system

- **Part of supply**

Note: more precise technical data are listed in Annex 2.

## **C.2 SPECIFICATION AND TIME SCHEDULE OF TECHNICAL DOCUMENTATION SUPPLY**

The total package price has to be including 1 hard copy and 3 CD of below shown documentation.

1. Documentation supply is required to 3 months from the date of Contract signing:
  - a) Drawing documentation for mechanical installation
  - b) Layout of electric connection for all unit (3x400/230V)
  - c) P&ID diagram
2. Documentation accompanied the compressor package supply:
  - a) Manual for the whole unit, Control System and Cooler
  - b) Catalogue of Spare Parts
  - c) Certificates of Conformity for whole package according to European directives:
    - Low Voltage 2006/95/ES
    - Electromagnetic Compatibility 2004/108/ES
    - Pressure Equipment 97/23/ES
    - Machinery 2006/42/ES
    - Equipment explosive Atmospheres 1994/9/ES
3. Details for shown certificates are as follow:
  - a) Material certificates
  - b) Pressure compressor testing protocol
  - c) Copies of EC – type certificates of each delivered electric equipment

## **D. PRICE PROPOSAL, INVOICING, WARRANTY**

### **D.1 METHOD FOR PRICE CALCULATION**

1. The bidder shall propose the Price for the subject of the Tender **in EUR, VAT excl.**,
2. The bidder shall include to the Price all and any costs incurred in regard to the delivery of the subject of the Tender.
3. The Price mentioned in the proposal shall cover all costs related to the subject of the Tender – Annex No. 1 shall contain the total price for the subject of the Tender, i.e. the summary of all items including all other costs of the bidder.

### **D.2 INVOICING**

The promulgator shall not provide advance payments.

The invoice maturity is within 30 days from the date of the invoice delivery to the registered office of the promulgator.

### **D.3 WARRANTY**

We require the guarantee for the whole package and all supplied components 18 months since putting into operation / 24 months from the date of supply. The Guarantor of the whole package (including subdelivery parts) has to be the company submitting the Quotation.

## **E. SUPPLEMENTARY CONDITIONS AND PROVISIONS**





**NAFTA a.s.**, Votrubova 1, 821 09 Bratislava

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1. The promulgator shall reserve the right to change the Tender conditions or to cancel the Tender anytime. It shall inform the bidders on these facts publishing a notice on the internet site of the promulgator [www.nafta.sk](http://www.nafta.sk).
2. The bidder shall not be entitled to compensation of costs related to the participation in the Tender.
3. Within the proposal evaluation the promulgator shall reserve the right to ask the bidders for explanation of the proposal or to verify some data and facts mentioned in the proposal.
4. No contractual relationship shall arise by the Tender closing and announcement of the Tender result.
5. The proposals shall not be returned to the bidders but they remain archived by the promulgator as a part of the tender documentation.
6. The promulgator shall be entitled to select a proposal which is the most suitable while it shall not be obliged to inform on reasons of its decision. It shall also be entitled to refuse all submitted proposals.
7. We require submitting the Quotation that is in accordance with requirements in this Tender. If the Quotation does not include the required information, it will be deemed as the disability to fulfill the delivery in accordance with the delivery conditions.

**F. LIST OF ANNEXES**

**Annex No. 1**

Cover letter for bidders

**Annex No. 2**

Technical specification for Sun-storage project



Annex No. 1)

SunStorage Project

COVER LETTER FOR BIDDERS

A.

Bidder:

Title: .....

Address: .....

COMPANY ID No.: .....

Tax ID No.: .....

Authorized representative of the bidder .....

Tel.: ..... Fax: .....

B. After studying the tender documents the delivery of the required range is being proposed:

1. fixed unit prices amounting to:

	Price in EUR / pc	Request. number of pc	Price for requested amount in EUR VAT excl.
1 pc of new (no reconditioned) compressor unit (package on one skid) supply in accordance with defined scope of supply and technical parameters shown in this request.			
Spare parts for start-up			
Spare parts for 2 years operation (for compressor and control system)			
Assumed price for precommissioning, commissioning, start-up, complete testing, and putting into operation (standard man day costs + assumed man days for each activity)			
DDP Plavecký Štvrtok			
<b>Total price for the whole delivery (DDP Plavecký Štvrtok)</b>			

2. within the date .....

3. with warranty period of: ..... months.

The validity of this proposal is set by 31<sup>st</sup> October 2014

We concurrently hereby confirm that the data provided in the remaining annexes to the proposal shall serve as binding documents for evaluation of our proposal.

.....

Seal and signature of the bidder representative

Annex No. 2)

### TECHNICAL SPECIFICATION

Item	Description	Value	Unit	Note
1	<b>DRIVER</b>			
	<b>Variable speed el. motor</b>	1	pcs.	
	voltage	3x400	V	
	<b>Speed control unit (VFD)</b>			
	speed range	40 - 100	%	
2	<b>COMPRESSOR</b>	1	pcs.	
	<b>Design point</b>			
	<b>suction pressure P1</b>	1	MPa abs.	
	discharge pressure P2	7	MPa abs.	
	<b>gas flow Q</b>	<b>18 000</b>	<b>Sm<sup>3</sup>/day</b>	<b>15 °C, 101 325 Pa, dry gas</b>
	suction temperature T1	20	deg.C	
	discharge temperature T2	40	deg.C	
	Tamb	30	deg.C	
	<b>Operation range</b>			
	P1=0,5 - 1,5 MPa abs.			
	<b>P2= 2,0 - 7,5 MPa abs.</b>			
	T1 = -10 to 35°C			
T2 max = 45°C				
<b>Tamb = -20 to 35°C</b>				
3	<b>PACKAGE REQUIREMENTS</b>			
	Installation in outdoor design	75	dBa	1 m from outside enclosure wall
	One skid design			
	Design for Zone 2			
	Local unit control panel			
	Gas coolers			acc. to gas discharge parameters
	Package voltage	3x400/230V		
4	<b>Average composition of natural gas</b>			
	See next table			

<b>Natural gas component</b>	<b>SunStorage Project</b>	<b>Gajary</b>
<b>Metane</b>	88,235	98,039
<b>Etane</b>	0,652	0,724
<b>Propane</b>	0,213	0,237
<b>i-Butane</b>	0,033	0,037
<b>n-Butane</b>	0,04	0,044
<b>i-Pentane</b>	0,008	0,009
<b>n-Pentane</b>	0,007	0,008
<b>n-Hexane</b>	0,01	0,011
<b>CO2</b>	0,095	0,106
<b>H2</b>	10	0
<b>N2</b>	0,706	0,785

**Note: Composition in mol%**