



תשתיות נפט ואנרגיה בע"מ
קו מוצרי דלק בע"מ
אגף כספים – מחלקת רכש והתקשרויות

27 פברואר, 2019

סימוכין: 212468

לכבוד

משתתפי מכרז 059-18

הנדון: מכרז 059-18 – מערך לטיפול בפליטות ריח בעת טעינת מזוט (להלן "המכרז")
הליך מעודכן - מסמך הבהרות מספר 2

1. במסגרת המכרז שבנדון נשאלנו שאלות הבהרה. להלן התייחסות החברה לשאלות / בקשות שהתקבלו:
נשאלנו / התבקשנו:

התייחסותנו	נשאלנו / התבקשנו
סעיף 6.2 הוסר. מצורף מפרט מעודכן רוויזיה P3 ("נוהל להגדרת מפגעי ריח", אשר צורף למסמכי המכרז, רלוונטי למפרט זה)	נספח E של המפרט הטכני – לא נמצא – בבקשה לפרסם



2. יובהר כי כל יתר תנאי המכרז נותרים ללא שינוי.
3. מסמך זה מהווה חלק בלתי נפרד ממסמכי המכרז, הנכם מתבקשים לחתום עליו ולהגישו עם יתר המסמכים.

בברכה,

טלמור סלע

מחלקת רכש והתקשרויות



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SPECIFICATION FOR VENT ODOUR TREATMENT SYSTEM

Spec.: 16958-01-SPC-001

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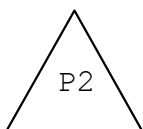
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1 GENERAL

- 1.1. This specification covers the minimum requirements for design, manufacturer, installation and commissioning of a complete Vent Treatment System, to be installed at Petroleum & Energy Infrastructures Ltd (PEI) facilities in Oil Port Terminal, Haifa, Israel.
- 1.2. The Petroleum & Energy Infrastructures Ltd (PEI) facility located at the Oil Port Terminal is fed through a permanent pipeline from Haifa Oil Refineries and feeds the tankers on the ships anchored in the port with heavy fuel oil. During filling of the ship tanker, vent gas is discharged through the vent line. The gases contain air with small amounts of fuel vapor as well as certain concentrations of H₂S and mercaptans (see Basis Of Design table Appendix A). The gases go into the atmosphere and cause unpleasant odours in the nearby environment. It is necessary to find an optimal solution that meets the Best Available Technology (BAT) requirement for handling these odours during ship loading.
- 1.3. There is no need to treat VOC in this case of heavy fuel.
- 1.4. The main composition of vent gases 7-700 mg/m³ H₂S, 60-220 mg/m³ mercaptanes. Minor concentration of VOC.
- 1.5. Required concentration of H₂S and mercaptanes is <1ppm.

2 SCOPE OF SUPPLY

A complete VENT TREATMENT SYSTEM for marine loading plant with 2,200 m³/h rated capacity including:

- 2.1. Adsorption column package
- 2.2. Column filling
- 2.3. Interconnection pipes and valves
- 2.4. A sensor for continuously monitoring H₂S and mercaptanes to be installed on atmosphere outlet line. The high value of concentration will trip the loading system down.
- 2.5. Main Fan (optional) if required. For the case that the filtration pressure loss is higher than the pressure available in the system.
- 2.6. Electrical Panel (if necessary) including:- cables, junction boxes and all necessary accessories for energizing all motors and equipment in supply battery limits.

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2.7. Control Panel based on a PLC for monitoring and controlling:- normal operation, start and emergency shut down. All necessary instrumentation and accessories for normal and safe operation of the system.

3 WORK EXCLUDED



- 3.1. Civil Works.
- 3.2. Foundations and anchor bolts.
- 3.3. External electrical cables and switch gear.
- 3.4. External instrument and communication cables to plant control system.
- 3.5. External piping layout.

4 PROPOSAL REQUIREMENTS

The Bidder's Proposal shall meet and cover the following issues:-

4.1. GENERAL

- 4.1.1. All documentation shall be written in the English language & SI units.
- 4.1.2. TECHNICAL
- 4.1.3. Process description including process flow diagram
- 4.1.4. System description including detailed scope of supply.
- 4.1.5. General plan including overall dimensions and loads.
- 4.1.6. Reference list of similar installations in Israel or worldwide (including contact details).
- 4.1.7. Utilities consumption:- electrical power (if relevant), amount of bed material for one refill, column refill period, etc.
- 4.1.8. Bed filling replace procedure and disposal recommendation.
- 4.1.9. Specify pressure required at the system inlet.
- 4.1.10. PLC manufacturer
- 4.1.11. Codes and Standards applied for design, fabrication and tests
- 4.1.12. Any deviation from this specification shall be highlighted in the Proposal.
- 4.1.13. Technologies shall comply with the Best Available Technique (B.A.T.) directive according to relevant BREFs (Best Available Technique Reference) documents.

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4.2. COMMERCIAL

- 4.2.1. The Bidder is requested submit and itemized price quotation following the Scope of Supply items.
- 4.2.2. Quotation for recommended spare parts for installation, commissioning and 2 years of operation.
- 4.2.3. Project schedule:- drawings approval, main equipment delivery, installation, training and commissioning.

5 PROCESS DATA AND REQUIRED PERFORMANCE

5.1. The VENT TREATMENT SYSTEM inlet conditions: flowrates

Max vent flow 2200 m³/h
 Annual vent volume 2,000,000 m³
 (summarized in APPENDIX A)

5.2. Duty

The VENT TREATMENT SYSTEM shall reduce all H₂S and mercaptanes content so that the VENT TREATMENT SYSTEM emission meets the maximum emission requirements as specified in APPENDIX A

5.3. The main composition of vent gases:

H₂S 7 -700 mg/m³,
 Mercaptanes 60-220 mg/m³.
 Minor concentration of VOC.

5.4. Required concentration of H₂S and mercaptanes is <1ppm.

5.5. Maximum allowed pressure drop include piping (10" line 80m approximately) pressure losses is 100 mbar. In case of higher system pressure drop vendor shall provide the suitable fan (optional).

5.6. Require Performance

5.6.1. Emission

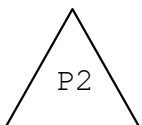
The VENT TREATMENT SYSTEM shall be designed to meet and comply with the maximum emission requirements regarding flow-rates and compositions ranges as specified in APPENDIX A, and "Procedure For Definition Of Odor Hazard" in Appendix D.



5.6.2. Availability

The VENT TREATMENT SYSTEM shall be designed to meet an overall availability above 99%

5.6.3. Performance Test

Bidder is requested to submit a Performance Test Procedure.



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5.7. Site conditions and utilities are specified in Appendix C.

6 MECHANICAL DESING REQUIREMENTS

6.1. General

- 6.1.1. The VENT TREATMENT SYSTEM shall be designed for continuous operation 365 days per year 24 hours per day.
- 6.1.2. The Vendor shall provide static and dynamic loads from the unit to supporting structure for design purposes.
- 6.1.3. Systems shall be designed to facilitate ease of inspection, cleaning, maintenance and operation.
- 6.1.4. All moving components shall be adequately guarded to prevent personnel from coming into contact with them. Guards shall be easily removable and shall be designed to enable lubrication points to be serviced without removal of guards. V-belt drives (if used) and drive shafts shall be totally enclosed. All necessary guards shall be supplied. Type of V-Belt drives and couplings shall be of standard size.
- 6.1.5. All bearing shall be accessible for greasing during operation. Good accessibility and simple replacement procedure of parts and subassemblies will be an important consideration in equipment selections.

6.2. Dimensions

All dimensions and quantities shall be in metric (SI) units.

6.3. Paint

All materials paintings shall be suitable for outdoor installation and weather proof according to IEC/EN 60529 IP 56.



6.4. Noise level

Noise level requirements are 85 Db at a distance of 1 meter

6.5. Nameplate

System's items supplied will carry a stainless steel nameplate attached to an easily accessible and visible point on the equipment. The nameplate will be stamped with the following information written in English:

- 6.5.1. Manufacturer's name and their job number;
- 6.5.2. Customer tag number;
- 6.5.3. Purchase order number;
- 6.5.4. Date of manufacture;

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- 6.5.5. Model number;
- 6.5.6. Operating and design data (capacity, pressure, temp, etc.);
- 6.5.7. Any other relevant information vendor finds important.

7 ELECTRICAL

The Vent Treatment Systems are defined as Zone 2 area.

8 INSTRUMENTATION & CONTROL

- 8.1. All instruments shall be wired to junction boxes.
- 8.2. All instrumentation shall be designed for Zone 2 Area.
- 8.3. The system control shall be implemented by a PLC covering normal operation, start up, safety and emergency shut down. The PLC will be connected to the Plant Distributed Control System, DCS (out of scope of supply) for transferring process information alarm conditions and failure status.
- 8.4. Operated solenoid valves shall have 2 limit switches (open and closed).

9 GUARANTEE

9.1. Performance Guarantee

The VENDOR guarantees that the VENT TREATMENT SYSTEM is capable of performing the duties stated in paragraph 4.



If the VENT TREATMENT SYSTEM is not capable of reaching the duty and performance specifications for a period of 24 hours of continuous operation, the VENDOR shall make the appropriate modifications in order to comply with this specification and carry out additional tests within one month on his own account.

The costs of rectification, changes modifications and additional tests shall be borne by the VENDOR (including VENDORS's expert expenses).

The period of guarantee shall recommence from the date of successful repair and satisfactory operation and successful performance test.

9.2. Mechanical Guarantee

The VENDOR shall guarantee that all materials and equipment furnished are of highest quality and the Manufacturer's work is

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performed in a skillful and workmanlike manner in accordance with good engineering practice.

The VENDOR shall guarantee material and workmanship for a period of 12 months from start up and successful performance test.

Should any defect due to faulty design, materials or bad workmanship become apparent during the guarantee period, The VENDOR shall repair or otherwise rectify the defects free of charge (including expenses of Vendor's experts), to Purchaser's satisfaction. The repair shall be made without any delay at a time and in a manner agreed with the Purchaser.

The period of guarantee shall commence from date of successful repair and satisfactory operation.

10 MANUFACTURER'S DATA BOOKS AND SUB SUPPLIER PRODUCT DATA

10.1. Upon full completion of order and at due time along the project, vendor shall provide data sheets, as made general arrangements drawing of all equipment supplied, material test certificates (for pressure parts), operation and maintenance manuals, installation and assembly instructions for all devices, products and equipments supplied by vendor and sub contractors.

10.2. Confirmations that design and manufacture have been carried out according to the relevant EN, DIN codes.

10.3. Plant data books shall be provided in 5 hard copies as well as in electronic media. The content shall be agreed at time of order.

10.4. Systems shall be packed and protected for shipping via sea transportation. The Vendor is responsible for ensuring that no rust is formed during shipment.



11 REQUIREMENTS FOR PACKAGING

Systems shall be packed and protected for shipping via sea transportation. Vendor is responsible for ensuring that no rust is formed during shipment.

12 INSPECTION AND TESTING



12.1. Vendor shall provide, a detailed quality control and manufacturing program covering the timing and phasing of all activities included in the scope of supply.

12.2. Systems shall be tested and inspected as per industry's standards.

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12.3. HCL nominated inspectors will be allowed to visit the Vendor's plant during fabrication and before delivery in order to inspect, approve or release the system.



12.4. The Vendor's quality control program shall guarantee the quality of material and verification of critical dimensions prior to shipment.

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APPENDIX A

Basis Of Design

parameter	value	
Max vent flow	2200 m ³ /h	
Annual vent volume	2,000,000 m ³	
Max filling time	24 h	
Max vent temperature	40 °C	
Vent H ₂ S concentration	7-700 mg/m ³	
required outlet H ₂ S concentration	1ppm	
Vent mercaptanes concentration	60-220 mg/m ³	
required outlet mercaptanes conc.	1ppm	
Vent Aromatics concentration	0-20 mg/m ³	
Vent Alkanes concentration	0-2,000 mg/m ³	
max allowable pressure in the tanker	100 mbarg	
Bed refill period	More than 1 year	To be specified by vendor

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APPENDIX B: SITE CONDITIONS

This document defines the design data to be used in the design of new plants and installation in Oil Port Terminal, Haifa, Israel.

1. Plant Location

The plant shall be located in Oil Port Terminal, Haifa, Israel.

2. Design Conditions

Altitude of Site	4 m above sea level.
Barometric pressure	760 mm Hg.
Atmospheric temperature	Max. 35 ⁰ C/Min. 1.5 ⁰ C.
Dry Bulb temperature	31 ⁰ C.
Relative humidity	Max .100%/ Ave. 85%/ Min. 10%

3. Rainfall

Average per year	600 mm
Design max. per 30 min.	35 mm
Design max. per 2 hrs.	60 mm

4. Basic Wind Velocity

30 m/s

According to Israeli Standard 414 (2008)

Defined as maximum 50-year average velocity of the wind for a period of 3 seconds, 10 meters above ground level in an open field.

Wind pressure	1200 N/m ²
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Defined as the pressure caused by the basic wind velocity.

5. Seismic Loads

Horizontal forces from earthquakes in zone no. 3, according to Israeli Standard No. 443(2008).



Intensity factor is 1.00 or according to the recommended lateral force requirements and tentative commentary – Seismology Committee Structural Engineers Association of California - 1988. Z = 0.3.

6. Ambient Conditions

Corrosive and dusty atmosphere near the sea.

7. Hazardous Area Classification

Hazardous area classification will be specified Zone 2

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APPENDIX C:

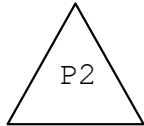
VENDOR DRAWINGS AND DATA REQUIREMENTS

DESCRIPTION	Approval Befor Fab.	With Proposal Qty. & Type	AFTER RECEIPT OF ORDER				
			Preliminary		Final		
			Qty. & Type	DS	Qty. & Type	DS	
1 P & I Diagrams	YES	3P	4P+MM	O+30	7P+MM	D	
2 General arrange/dimensional DWGS.	YES	3P	4P+MM	O+30	7P+MM	D	
3 Loads & Foundation Requirements		3P	4P+MM	O+30	7P+MM	D	
4 Assembly & Cross-Sectional DWGS.	YES		4P+MM	O+30	7P+MM	D	
5 Compl. Part List/Bill of Materials			4P	O+30	7P	D	
6 Fabrication Detailed DWGS.	YES				7P+MM	D	
7 Elect. Schematics & Wiring Diag.			4P+MM	O+30	7P+MM	D	
8 Control & Inst. DWG & Specs.			4P+MM	O+30	7P+MM	D	
9 Driver data specs requirements		3P	4P	O+30	7P	D	
10 Piping DWGs.					7P+MM	D	
11 Nozzles External moments & Forces							
12 Vendor Data Sheets	YES	3P	4P+MM	O+30	7P+MM	D	
13 Test Certificates Before Shipment	YES				7P	D	
14 Code/material Certifications Before Shipment					7P	D	
15 Erection & Installation Instruct.			4P+MM	O+30	7P+MM	D	
16 Operation & Maintenance Instruct			4P+MM	O+30	7P+MM	D	
17 Lubrication Schedule: Freq & Type					7P	D	
18 Fabrication Schedule & Periodic Progress Report			1P	Every Month			
19 Priced Recommended Spare Parts list for 2 years operation		3P	4P+MM	O+30	7P+MM	D	
20 Reference List		3P					

ABBREVIATION:

- 1 DOCUMENTS SUBMISSION SCHEDULE = DS
- 2 DRAWING QUANTITY & TYPE: P = Print, MM = Magnetic Media (e.g. 3P means – 3 Prints).
- 3 DRAWING SCHEDULE: 0 = Date of Order, date of order D = Date of Dispatch, A = Date of Approval, (e.g. 0+30 means 30 days after)

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APPENDIX D:

PROCEDURE FOR DEFINITION OF ODOR HAZARD



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