



## **B- Documents for the SWAP Spot Public Tender (leg 2)**



**Appendix No. (1)**  
**A Letter of Commitment**



**To: Ministry of Energy and Water**  
**Directorate General of Oil**

We,(Bidder name.....) hereby present our offer for the sale of a quantity of /.....By numbering/ MT (.....By lettering) metric tons of fuel oil 1.0 % sulfur Grade (A) and / or Grade (B) and/or Gasoil 0.2% for the use of Electricité Du Liban - Lebanon.

We hereby confirm and approve that the offer is in accordance with the SWAP Spot Public Tender conditions with no deviation whatsoever.

Please find enclosed the documents required according to the above mentioned SWAP Spot Public Tender (**Clause No. “6”**).

For all your correspondence, please find here below our mailing address:

Email :

Address:

Tel No.:

Fax No.:

E-mail:

Signature:



**Appendix No. (2)a**  
**Price**  
**Quality Grade (A or B) Fuel oil with sulfur content 1.0 pct**

The price in U.S. Dollars per Metric Ton (DAP (Delivery At Place) one or more safe port(s)/ berth(s) Lebanon, based on the received quantity, will be equal to: The average of all the means of the high and the low quotations for Fuel 1.0% as published in Platts European Marketscan under the Heading **“FOB Med Basis Italy”** plus a premium of U.S. Dollars /..... / (By numbering) PMT U.S. Dollars ..... (By lettering) per Metric Ton.

The quotations to be taken into consideration will be the effective and valid published quotations of the month of Loading **(to be the same month of loading from Leg 1)**

In case of outturn quantity loss as determined by the appointed inspector at discharge port, the loss, if any, up to 0.5% of the Bill(s) of Lading (B/L) Quantity will be borne by the buyer and any loss above 0.5% of the B/L(s) Quantity will be for Operators account.

The cost of each additional port of discharge in Lebanon will be an additional extra premium of U.S. Dollars /...../(By numbering) PMT U.S. Dollars/...../ (By lettering) per Metric Ton.

The Bidder may notice lowering the average of all the means of the high and the low quotations mentioned above, before adding the premium, and his offer will be accepted. Knowing that the amount of lowering should be mentioned in the absolute value, and not as a percentage discount rate on the total mean of the sum of all the means of the high and the low quotations.

1	The average of all the means of the high and the low quotations for Fuel 1.0% as published in Platts European Marketscan under the Heading <b>“FOB Med Basis Italy”</b> as mentioned above.	
2	Plus: A premium in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
3	Plus: The cost of each additional port of discharge in Lebanon in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
4	Minus: Discount on (1) in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
5	Final Price FP : (2)+(3)-(4) in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton

**SIGNATURE:**  
**OPERATOR**





**Appendix No. (2)b**  
**Price**  
**Gas Oil 0.1 % Sulfur**

The price in U.S. Dollars per Metric Ton DAP (Delivery At Place) one or more safe port(s)/ berth(s) Lebanon, based on the received quantity, will be equal to: The total mean of the sum of all the means of the high and the low quotations for Gas oil 0.1 % as published in Platts European Marketscan under the Heading **“FOB Med Basis Italy”** plus a premium of U.S. Dollars /..... / (By numbering) PMT U.S. Dollars ..... (By lettering) per Metric Ton.

The quotations to be taken into consideration will be the effective and valid published quotations of the month of Loading **(to be the same month of loading from Leg 1)**

In case of outturn quantity loss as determined by the appointed inspector at discharge port, the loss, if any, up to 0.5% of the Bill(s) of Lading (B/L) Quantity will be borne by the buyer and any loss above 0.5% of the B/L(s) Quantity will be for Operators account.

The cost of each additional port of discharge in Lebanon will be an additional extra premium of U.S. Dollars /...../(By numbering) PMT U.S. Dollars/...../(By lettering) per Metric Ton.

The Bidder may notice lowering the total mean of the sum of all the means of the high and the low quotations mentioned above, before adding the premium, and his offer will be accepted. Knowing that the amount of lowering should be mentioned in the absolute value, and not as a percentage discount rate on the total mean of the sum of all the means of the high and the low quotations.

1	The total mean of the sum of all the means of the high and the low quotations for Gasoil 0.1% S as published in Platts European Marketscan under the Heading <b>“FOB Med Basis Italy”</b> as mentioned above.	
2	Plus: A premium in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
3	Plus: The cost of each additional port of discharge in Lebanon in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
4	Minus: Discount on (1) in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton
5	Final Price (FP): (2)+(3)-(4) in U.S. Dollars (By lettering)..... per Metric Ton.	In U.S. Dollars/..... / (By numbering) per Metric Ton

**SIGNATURE:**  
**SELLER**





**Appendix No. (3)**  
**Integrity Declaration**  
**(Relevant to Bidders)**

Transaction title:

The Awarding party:

Name of bidder / authorized signatory for the company:

The Company's name:

We, the undersigned, affirm the following:

1- We, our employees, partners, agents, shareholders, consultants, or their relatives do not have any relationships that may lead to a conflict of interest in the subject matter of this transaction.

2- We will inform the Ministry of Energy & Water – Directorate General of Oil and the awarding party if a conflict of interests arises or is discovered.

3- Neither we nor any of our employees, partners, agents, shareholders, consultants or their relatives will engage in fraudulent, corrupt, coercive or obstructive practices in relation to our offer or suggestion.

4- Neither we nor any of our partners, agents, shareholders, consultants or their relatives had paid any amounts to the workers, partners, or employees participating in the procurement process on behalf of the awarding party or for anyone.

5- We undertake to respect the Lebanese and international laws, especially the British ones, and not to pay any kind of bribes, benefits or gifts, and to bear full responsibility for any violation committed by any entity or company or any person working in our name or in our interest to implement this Award under penalty of judicial prosecution and annulment of the Award.

6- We pledge to lift banking secrecy from the bank account into which any amount of public money is deposited or transferred to it for the benefit of the administration in every Award, of any kind that deals with the expenditure of public money.

7- In the event that we violate this declaration and pledge, we will not be eligible to participate in any public transaction, whatever its subject matter, and accept in advance any exclusion measure taken against us, and we pledge voluntarily not to dispute it. Any false information exposes us to judicial prosecution by the competent authorities.

8- We hereby declare that we have the financial capabilities to honor and fully perform any financial obligation and there is no event which impedes or impairs such capability.

9- We undertake to indemnify the Ministry of Energy & Water as sum equal to the losses suffered or incurred by the Ministry of Energy & Water out of or in connection with any breach of the representations and warranties herein contained or in the event any of the covenants appear to be inaccurate or misleading.

Date:

Seal:

Signature:



**Appendix No. (a1)**  
**PRODUCT SPECIFICATIONS**  
**Product : Fuel Oil Quality Grade (A)**

HEAVY FUEL OIL PARAMETERS FOR GRADE A HFO				
	Parameters	Specified	Rejected	Test Method
1	Density Kg/l at 15 °C		>0.991	ASTM D 1298:1999 OR ASTM D 4052:1996
2	KINEMATIC VISCOSITY AT 50 DEG C (MM2/S)	165	>240	ASTM D 445:1997
3	FLASH POINT pensky martin closed cup °C		<66	ASTM D 93:2002
4	SULFUR CONTENT % MASS		>1	ASTM D 129:2000 OR ASTM D 4294:2002
5	SEDIMENT PCT MASS		>0.2	ASTM D 473:2002
6	WATER & SEDIMENTS PCT VOL	1	>1.5	ASTM D 1796:1997
7	ASH CONTENT PCT MASS	0.12	>0.15	ASTM D 482:2000
8	SODIUM CONTENT PPM	40	>45	ASTM D 5863:2000
9	VANADIUM CONTENT PPM	110	>135	ASTM D 5863:2000
10	POUR POINT °C		>30	ASTM D 97:1996
11	ASPHALTENES PCT MASS	3	>5	IP 143
12	HEAT OF COMBUSTION MJ/kg Gross		<41	ASTM D 4868:2000
13	CARBON RESIDUE PCT WT		>18	ASTM D 524:2000



**Appendix No. (a2)**  
**PRODUCT SPECIFICATIONS**  
**Product: Fuel Oil Quality Grade (B)**  
**Meeting the Specifications of**  
**ISO 8217-2017 for Fuel Oil RMG 380**

**Pg1**

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S.N°	Parameters	Units	Specifications	Equivalent Test Methods	ISO 8217-2017
1	Total Sediment Content <sup>b</sup>	(mass/mass)%	< 0.1%	IP 390	ISO 16307-2
2	Viscosity at 50°C	mm <sup>2</sup> /s	< 380	ASTM D445	ISO 3104
3	density at 15°C	kg/m <sup>3</sup>	< 991	ASTM D4052	ISO 3675 or ISO 12185
4	Micro carbon residue	% m/m	< 18	ASTM D524 or ASTM D4330	ISO 10370
5	aluminum + silicon	mg/kg	< 60	IP501	IP 501, IP 470 or ISO 10478
6	Sodium <sup>a</sup>	mg/kg	< 100	IP501	IP 501, IP 470
7	Ash	% n/m	< 0.1	ASTM D482	ISO 6245
8	Vanadium <sup>a</sup>	mg/kg	< 350	IP501	IP 501, IP 470 or ISO 14597
9	CCAI		< 870	ISO 8217	see 6.3 a)
10	Water	% V/V	< 0.5	ASTM D95	ISO 3733
11	pour point	°C	< 30	ASTM D97	ISO 3016
12	flash point	°C	> 60	ASTM D93	ISO 2719
13	sulfur	% m/m	< 1	ASTM D4294	ISO 8754, ISO 14596
14	acid number	mgKOH/g	< 2.5	ASTM D664	
15	used lubricating oils (ULO): Calcium and zinc, or calcium and phosphorus	mg/kg	the fuel should be free from ULO, and shall be considered to contain ULO, when either of the following conditions is met:  * calcium > 30 and zinc > 15 or * calcium > 30 and phosphorus > 15	IP501	IP 501 or IP 470, IP 500
16	hydrogen sulfide	mg/kg	< 2	IP570	IP 570
17	Heat of Combustion	MJ/kg Gross	> 41	ASTM D 4868:2000	
18	Sediments and Water	% VOL	< 1	ASTM D 1796:1997	

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ADDITIONAL SPECIFICATIONS FOR HIGH GRADE FUEL OILS				
S.N <sup>o</sup>	Parameters	Units	Specifications	Test Methods
19	Bromine Number	g Br/100g	< 12	ASTM D 1159
20	Ratio of Asphaltenes content / Conradson Carbon Residue		< 0.56	ASTM D 189 (OR ASTM D4530) / IP 143
21	P-Value		> 1.5	ASTM D7112 / SMS1690
22	Heptane Insoluble	(mass/mass)%	min: 0.5 and max: 30	ASTM D6560
23	Cleanness rating		< 3	ASTM D4740
24	Paraffin Wax content	(mass/mass)%	< 5	UOP 46

\* Limit to two different HFO counts as maximum for ship loading  
\*\* HFO loading sample according to ISO 2217-2017  
\*\*\* For Vanadium/Sodium Ratio, Vanadium/Va > 100 mg/kg sodium Na < 1% of Vanadium  
\*\*\*\* The total sediment content should include the following tests: TSB, TSP and TSA

**Notes**



**Appendix No. (a3)**  
**PRODUCT SPECIFICATIONS**  
**Product : Gas Oil Specs and EDL Clarifications**

Parameters	Test Method	Unit	Limits as per Siemens Manual		For Evaluation
			Min	Max	
Total Sulfur (S)	ASTM D3246/D5453/ ISO6326	Mass %		0.2	
Fuel Bound Nitrogen (FBN)	ASTM D4629	Mass %		0.015	
Lower Heating Value (LHV)	ASTM D4809/DIN51900	MJ/kg	42		
Density (at 15°C)	ASTM D1298/DIN51757	kg/m3	820	870	
Kinematic Viscosity (at 40°C)	ASTM D445/ISO-3104/DIN51562-1	mm2/s(cSt)	1.3	5.5	
Distillation, 90 % volume recovered @ °C max	ASTM D86/ISO3405	°C		365	
Carbon Residue	ASTM D4530/ISO10370/DIN51551	Mass %		0.15	
Oxidation Stability	ASTM D2274/IP365/95	mg/100ml		2.5	
Sediment & Water	ASTM D2709	Vol %		0.1	
sediment Particulates		mg/kg		20	
d<10µm	ASTM D6217/IP415/DIN51419/DIN EN 12662			18	
10≤d≤25µm				2	
d≥25µm				0	
Water	ASTM D95	Vol %		0.05	
Sediment	ASTM D473/ISO3737/DIN51789//DIN EN 12662	Mass %		0.01	
Gum Content	ASTM D381	mg/100ml		7	
Pour Point (SPP)	ASTM D97/ISO3016	°C		0	
Flashpoint (SFP)	ASTM D93/D56/ISO2719	°C	60		
Acid Number	ASTM D664	mg/g KOH		0.1	
Ash content	ASTM D482/ISO6245/DIN51575/DIN EN 2645	Mass %		0.01	
Na + K	ASTM D3605 / DIN 51790	mg/kg		0.5	
V	ASTM D3605 / DIN 51790	mg/kg		0.5	
Pb	ASTM D3605 / DIN 51790	mg/kg		1	
Ca	ASTM D3605 / DIN 51790	mg/kg		1	
Cl	ASTM D4929//ISO15597	mg/kg		6	
Parameters	Test Method	Unit	Ranges as per Siemens Experience		
Carbon (C)	D5291 / DIN 51721	% Mass	85 - 87.5		
Hydrogen (H)	D5291 / DIN 51721	% Mass	11 - 14.5		
Oxygen (O)	D5291 / DIN 51721	% Mass	<0.2		
Distillation range					
50 % evaporated					
65 % evaporated					
90 % evaporated					
End point					
Cold filter Plugging point (CFPP)	D637/EN116	°C	Fuel temperature > 10 °C + CFPP		

**Note for Evaluation:**

- If Gum content (washed and un-washed) ≤ 7mg/100mL and all the parameters (with limits as per Siemens manual) comply with the above mentioned limits, then the gas oil sample complies with the required specifications.
- If Gum content (washed and/or un-washed) > 7mg/100mL, and all the parameters (with limits as per Siemens manual) and all the remaining parameters (with ranges as per Siemens Experience) comply with the above mentioned limits and ranges, then the gas oil sample complies with the required specifications.

These parameters shall be evaluated in all conditions

These parameters shall be evaluated if  
 Gum content value (washed and/or  
 unwashed) > 7mg/100mL



JK

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هام و عاجل جداً

كهرباء لبنان  
"مؤسسة عامة"  
ELECTRICITE DU LIBAN  
"Etablissement Public"

٢٠٢١/٥/١١

جانيب المديرية العامة للنفط  
فاكس: ٠١/٢٨٠٧٠١

شارع النهر - بيروت - تلفون: ٢٩ - ٩٦١-١-٤٤٢٧٢٠  
فاكس: ٨٤ - ٩٦١-١-٥٨٣٠٩٤  
ص.ب. ١٣١  
رقم المحفوظات: ٢١٠  
رقم الصادر: ٤  
بيروت في ٢٠٢١/٥/١١

الموضوع : ملاحظات حول المواصفات الفنية لمادة الغاز أولي موضوع استدراج العروض الفوري رقم ١١١  
تاريخ ٢٠٢١/٤/٢٩  
المراجع : - كتاب المديرية العامة للنفط إلى مؤسسة كهرباء لبنان تاريخ ٢٠٢١/٥/١١

بالإشارة إلى الموضوع والمرجع أعلاه،

وعطفاً على كتاب المديرية العامة لإدارة المناقصات رقم ١٠/٤٢ تاريخ ٢٠٢١/٥/٠٦ (مستند رقم ١)،  
بأن الخبر الأوروبي يوصي من حيث المبدأ باخذ رأي الشركة الصانعة في طريقة الاختبار ASTMD381، وأن هذا  
الأمر يقرر بالنهاية بالاتفاق ما بين مؤسسة كهرباء لبنان والشركة الصانعة، وهو خارج عن اختصاص إدارة  
المناقصات،

وعطفاً على كتابكم تاريخ ٢٠٢١/٥/١١ (مستند رقم ٢)، وبعد الاطلاع على كتب الشركات المرفقة بكتابكم  
ودرس الملاحظات، نفيدكم بالتالي:

أولاً: بالنسبة لملاحظات شركة "ZR Energy DMCC" وفق كتابها رقم T0408-42-MEW-PT0802 تاريخ ٢٠٢١/٥/٠٤ (مستند رقم ٣):

- **Gum Content:** Can you please clarify if what is meant is "washed gums" or "unwashed gums"? Please confirm the correct testing method that is applicable for gasoil not jet fuel. The notes also mention "washed and unwashed" – does this actually mean "washed or unwashed"?

**Answer:** The value 7mg/100 mL is for both washed and unwashed Gum content. We confirm that the applicable test method is ASTM D381 as per Siemens request. As for the notes, it is "washed and unwashed".

- **Heat of Combustion:** This test method (ASTM D4809) is not industry standard. We suggest using ASTM D4868 which is industry standard.

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٤٤٢٧٢٠



**Answer:** This is the applicable test method (ASTM D4809) as per the manufacturer Company Siemens' Manual. Knowing that, this method was applied for testing the "LHV" of Gas oil sample from the last two cargos by the certified laboratory Bureau Veritas – Dubai contracted by the General Directorate of Oil.

- **Sediment particulates:** We would like to point out that the test methods applicable are not suitable. The standard test method relevant for gasoil is ASTM D6217 or IP415. Testing method of DIN 51419 is obsolete and was cancelled in 1983. We suggest you remove all test methods that are not ASTM 6217 + IP415.

**Answer:** All these test methods are according to Siemens Manual, which are applied by the certified laboratory Bureau Veritas – Dubai, contracted by the General Directorate of Oil, for testing the Sediment particulates in the Gas oil sample from the last two cargos.

- **Sediment particulates:** The particulates size specified is " $d < 10 \mu\text{m}$  ,  $10 \leq d \leq 25 \mu\text{m}$  ,  $d > 25 \mu\text{m}$ " which are unknown parameters and seem to look for the sizes of particles, rather than overall quantity. These methods are designed for determination of total quantity of contamination particles and do not imply to calculate their quantity depending on size of each particle as is requested in the spec. If it is necessary to count the particles according to their diameters, then the suggested method is ASTM D7619.

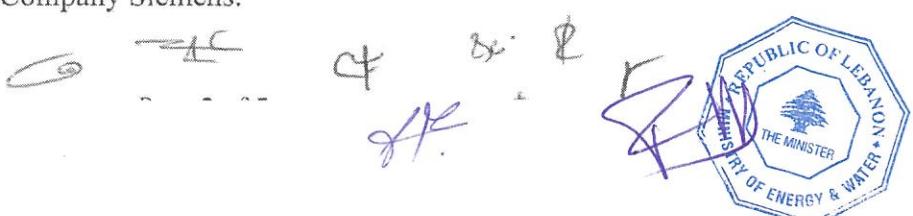
**Answer:** This test method is according to Siemens Manual, which is applied by the certified laboratory Bureau Veritas – Dubai, contracted by the General Directorate of Oil, for testing the Sediment particulates in the Gas oil sample from the last two cargos.

- **Acid number:** The Unit need to be corrected – mg KOH/g instead of mg /g KOH.

**Answer:** The correct unit for acid number is mg/g KOH as per Siemens Manual.

- **Chlorine:** The test method requested is not suitable. The methods to be used are IP510 or UOP779.

**Answer:** The method D4929 / ISO15597 for testing "Cl" is requested by the manufacturer Company Siemens.



- **Notes for evaluation:** This section is extremely unclear. We request further clarifications on this section.

**Answer:** Kindly specify the exact points that are not clear in the evaluation.

**ثانياً:** بالنسبة للاحظة شركة "Independent Petroleum Group Limited" وفق كتابها تاريخ ٤/٥/٢٠٢١ (مستند رقم ٤):

- Requesting a waiver in the Gum which will make us in a better position to participate in your tender for subject requirement.

**Answer:** The Gum Content is requested by the Manufacturer company Siemens. knowing that the additional set of parameters marked as "Ranges as per Siemens Experience" will be evaluated if the Gum Content (washed and/or unwashed) are outside the specified range 7mg/100mL, where two Gas oil cargos were evaluated and approved according to these additional parameters.

**ثالثاً:** بالنسبة للاحظات شركة "ELINOIL Hellenic Petroleum Company" وفق كتابها تاريخ ٥/٥/٢٠٢١ (مستند رقم ٥):

- Given that Gasoil should be tested for Gums under ASTM381 if unwashed and , if anyway if it is tested, the method cannot produce a result of less than 7mg/100mL (unwashed), we presume that the second set of parameters marked as "Ranges as per Siemens Experience", will always be applicable.

**Answer:** Correct, if the unwashed Gum Content exceeds 7mg/100mL.

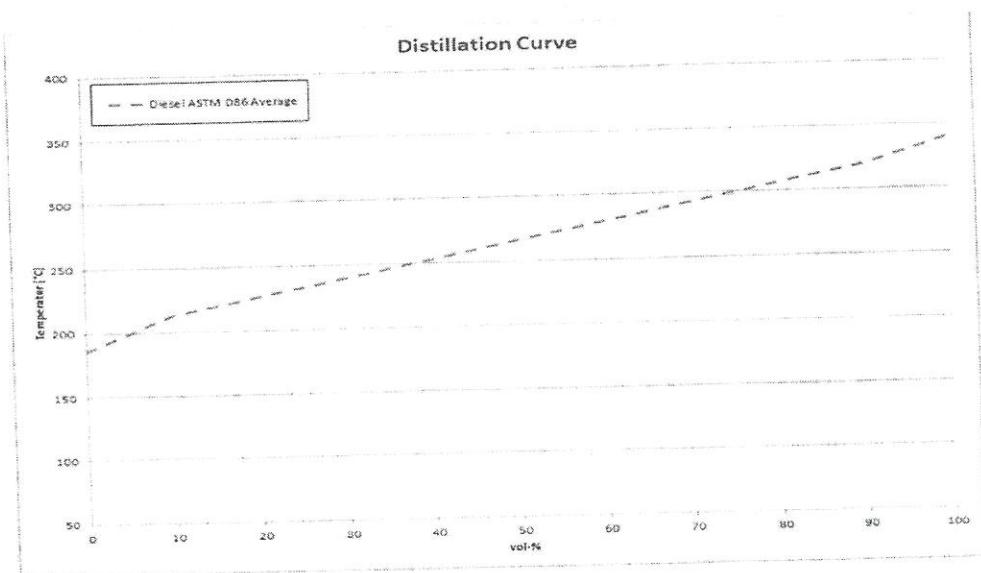
- We are still reviewing the relative values for C, H, and O.

**Answer:** Noted.

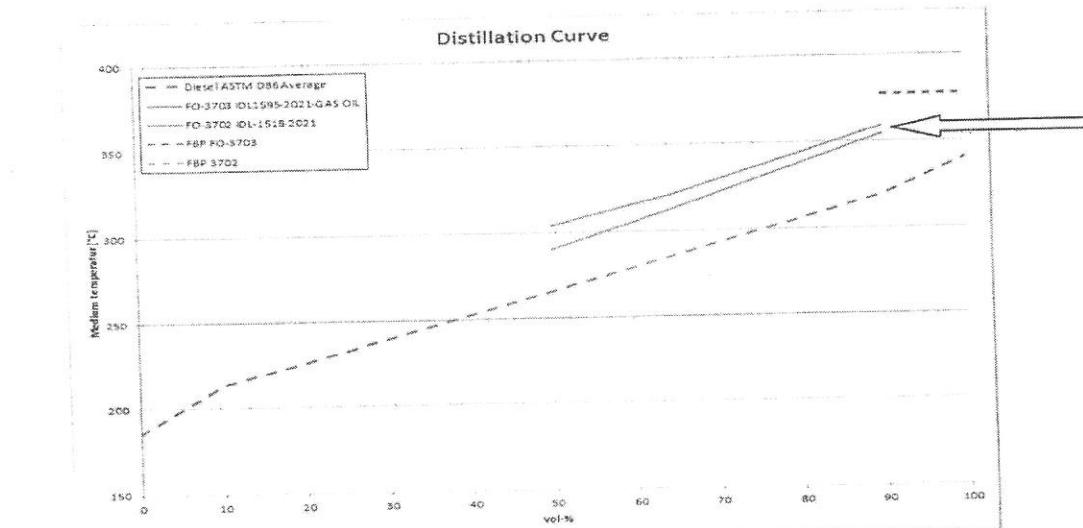
- Regarding distillation, we have noticed that the rejection criteria are totally vague. In ASTMD86, there is no reference boiling curve. Therefore, we don't understand where the requested specification refers to. Furthermore, the notion of a "strong deviation" is totally subjective and open to wide interpretation. Could you please specify what stands for strong deviation? We would strongly recommend that you revise the specification to indicate min/max values for the distillation, as per the diesel specification for example.

**Answer:** Kindly find below the reference boiling curve according to ASTM D86, where the requested curve shall be parallel to this reference curve, taking into consideration that there is already a max limit for the 90 % volume of Distillation which is set to 365 °C.





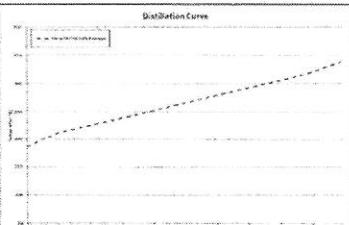
As an example, kindly find below the distillation curves for two Gas oil Cargos that were evaluated accordingly and accepted in the last couple of months.



رابعاً: بالنسبة للاحظات مختبر "Bureau Veritas" - دبي وفق البريد الإلكتروني تاريخ ٢٠٢١/٥/٩ (مستند رقم ٦):

- Recommends splitting the Gum content test into two lines, for the unwashed and washed, while stating the conditions at which the test was performed at, such as temperature and time.



All parameters must be filled by the Gas oil supplier								
Parameters	Test Method	Unit	Limits as per Siemens Manual		For Evaluation			
			Min	Max				
Total Sulfur ( S )	ASTM D3246/D5453/ ISO6326	Mass %		0.2				
Fuel Bound Nitrogen ( FBN )	ASTM D4829	Mass %		0.015				
Lower Heating Value ( LHV )	ASTM D4809/DIN51900	MJ/kg	42					
Density ( at 15°C )	ASTM D1298/DIN51757	kg/m3	820	870				
Kinematic Viscosity ( at 40°C )	ASTM D445/ISO-3104/DIN51562-1	mm2/s(cSt)	1.3	5.5				
Distillation, 90 % volume recovered @ °C max	ASTM D86/ISO3405	°C		365				
Carbon Residue	ASTM D4530/ISO10370/DIN51551	Mass %		0.15				
Oxidation Stability	ASTM D2274/IP385/95	mg/100ml		2.5				
Sediment & Water	ASTM D2709	Vol %		0.1				
sediment Particulates		mg/kg		20				
d<10µm				18				
10≤d≤25µm	ASTM D6217/IP415/DIN51419/DIN EN 12662			2				
d≥25µm				0				
Water	ASTM D95	Vol %		0.05				
Sediment	ASTM D473/ISO3737/DIN51789//DIN EN 12662	Mass %		0.01				
Gum Content (Unwashed)	ASTM D381	mg/100ml		7				
Pour Point (SPP)	ASTM D97/ISO3016	°C		0				
Flashpoint (SFP)	ASTM D93/D56/ISO2719	°C	60					
Acid Number	ASTM D654	mg/g KOH		0.1				
Ash content	ASTM D482/ISO6245/DIN51575/DIN EN 2645	Mass %		0.01				
Na + K	ASTM D3605 / DIN 51790	mg/kg		0.5				
V	ASTM D3605 / DIN 51790	mg/kg		0.5				
Pb	ASTM D3605 / DIN 51790	mg/kg		1				
Ca	ASTM D3605 / DIN 51790	mg/kg		1				
Cl	ASTM D4929/ISO15597	mg/kg		6				
Parameters	Test Method	Unit	Ranges as per Siemens Experience					
Carbon ( C )	D5291 / DIN 51721	% Mass	85 - 87.5					
Hydrogen ( H )	D5291 / DIN 51721	% Mass	11 - 14.5					
Oxygen ( O )	D5291 / DIN 51721	% Mass	<0.2					
Distillation range			Distillation Curve					
50 % evaporated								
65 % evaporated								
90 % evaporated (Defined above)								
End point								
Cold filter Plugging point (CFPP)	D637/EN116	°C	Fuel temperature > 10 °C + CFPP					
<b>Note for Evaluation:</b>								
* If Gum content (washed and un-washed) ≤ 7mg/100mL and all the parameters (with limits as per Siemens manual) comply with the above mentioned limits, then the gas oil sample complies with the required specifications.								
* If Gum content (washed and/or un-washed) > 7mg/100mL, and all the parameters (with limits as per Siemens manual) and all the remaining parameters (with ranges as per Siemens Experience) comply with the above mentioned limits and ranges, then the gas oil sample complies with the required specifications.								

These parameters shall be evaluated in all conditions

These parameters shall be evaluated if  
Gum content value (washed and/or  
unwashed) > 7mg/100mL



**Answer:** Siemens has already clarified to Bureau Veritas during the online meeting held on 29/03/2021 that the performed modifications to ASTM D381 by BV are plausible and this depends on the core know how of the laboratory itself, and this was mentioned in Siemens letter dated 02/04/2021 as follows:

*"As stated in the meeting from 29th of March 2021 and the customer letter (dated 30.3.2021) the performed modifications are plausible. Necessary modifications to ASTM D381 depending on fuel quality and sample are core know how of the individual laboratories."*

كما نفيكم بأننا سنقوم بمراسلة مختبر Bureau Veritas - دبي والشركة الصانعة Siemens لمراجعة ملاحظات شركة ZR Energy، علمًا أنه تم تطبيق طرق الفحص المذكورة من شركة ZR Energy من قبل مختبر -Bureau Veritas دون تدوين أي اعتراض،

استناداً إلى ما ورد أعلاه، تجدون ربطاً جدول المواصفات المطلوبة للغاز أويل حيث تم توضيح طريقة تقييم الـ Distillation range، مع وضع رسم بياني كمرجع لاعتماده لدى تقييم نتيجة فحص هذا المكون.

كما تجدر الإشارة إلى أن مختبر Bureau Veritas - دبي قد أجرى جميع الفحوصات الأساسية والإضافية المذكورة في الجدول المرفق على عينتي الغاز أويل المأخوذتين من البالغتين Perla و Histira و Antares خلال الشهرين الماضيين حيث تم قبول تفريغ البالغتين على أساسها،

وبالتالي، نتمنى عليكم إطلاق مناقصة تأمين شحنة الغاز أويل فوراً وبالسرعة القصوى وفق ما ورد أعلاه واستناداً إلى جدول المواصفات الموضح المرفق، وعطفاً على كتاب مؤسسة كهرباء لبنان رقم ٢٠١٦ تاريخ ٢٠٢١/٠٥/١١.

ونفضلوا بقبول فائق الاحترام.

ب.ع. - ر.ع.  
أ.ع. - ط.ب. - ب.س.  
ف.ح. - خ.ح.

رئيس مجلس الإدارة  
المدير العام

كمال الحاي

نسخة إلى: - معالي وزير الطاقة والمياه



**Appendix No. (b/1)**  
**Technical Requirements of ports/berths**  
**ZOUK TERMINAL**  
**PORT REGULATIONS**



The Zouk Terminal is a S.B.M. berth, located 5 miles north of Beirut Harbor, and 1500 meters from the shore, the sea line is 20 inches diameter.

The depth at the buoy is about 25 meters.

**Tanker size**

D.W.T.	40.000 Maximum
L.O.A.	200 meters Maximum

**Tanker Requirements:**

- 1- Preferable if equipped forward with standard S.B.M. bracket (Smit of AKD" system).
- 2- Manifold connection 12 inches A.S.A.
- 3- Derrick 5 tons minimum.
- 4- Pumps must be centrifugal, and capable to maintain 100 P.S.I pressure of ship's manifold at 1500 tons/hour discharge rate.
- 5- Must be able to discharge cargo and take ballast simultaneously, or has permanent ballast tanks about 25% of her D.W.T.
- 6- Must be able to heat up the cargo above 125deg F prior and during discharge.
- 7- Ship's crew has to assist in mooring and hose connection.



**Appendix No. (b/2)**  
**JIEH TERMINAL**  
**PORT REGULATIONS**



The Jieh Terminal is a Multi – Buoy Mooring (M.B.M.) berth and consists of seven (7) buoys.

**Tanker size**

D.W.T. 50.000 Maximum  
L.O.A. Between 170m. and 200m. Maximum

**Tanker Requirements:**

- 1- Maximum draught loaded 12m.
- 2- Manifold connection 12 inches A.S.A.
- 3- Derrick 5 tons minimum.
- 4- Pumps must be centrifugal, and capable to maintain 7.28 bars mx. pressure for a fuel having viscosity 130Cst at 50 deg C(1500 Redwood No. 1 at 100 deg F).
- 5- Must have permanent ballast tanks about 25% to 30% of her D.W.T.
- 6- Must be able to heat up the cargo above 55deg C prior and during discharge.
- 7- Ship's crew has to assist in mooring and hose connection.





**Appendix No. (b/3)**  
**Technical Requirements of ports/berths**  
**ZAHRANI POWER PLANT TERMINAL REGULATIONS**

The Zahrani Terminal is a S.P.M. (Single Pile Mooring) berth located approx. 3 miles south of Saida Harbour, and approx. 2500 meters from the shore (Sealine departure point)

- The Sealine is 20" Diameter.
- The depth at the S.P.M. location is about 23 meters.

**TANKER SIZE**

- DWT 60.000 Max.
- L.O.A. : 225 meters max.

**TANKERS REQUIREMENTS**

- 1- Manifold connection: 16 inches ANSI 150 FF flange, intended for 16" quick connection Camlock type installed at the end of the SPM system rail hose.
- 2- DERRICK: 5 Ton Min.
- 3- PUMPS : Centrifugal and capable of maintaining 10 to 14 Bar offload pressure range on ship's manifold, at a discharge rate of 2400 C.M/Hour for gasoil fuel having a min. viscosity of 1.9 CST( 9.5 CST at 20 deg C and 2.8 CST at 40 deg C) .
- 4- Must be able to discharge cargo and take ballast simultaneously, or has a permanent ballast about 25% of her D.W.T.
- 5- Ship's crew has to assist in mooring and floating hose connection.
- 6- Max. draft loaded 13Mt.





**Appendix No. (b/4)**  
**DEIR AMMAR POWER PLANT TERMINAL REGULATIONS**

The Beddawi Terminal is a S.P.M. (Single Pile Mooring) berth located approx.3 miles North of Tripoli Harbor, and approx. 3500 meters from the shore (Sea line departure point).

- The Sea line is 20" Diameter.
- The depth at the S.P.M. location is about 22 meters.

**TANKER SIZE**

- DWT 60.000 Max.
- L.O.A.: 225 meters max.

**TANKERS REQUIREMENTS**

1-Manifold connection: 16 inches ANSI 150 FF flange, intended for 16" quick connection Camlock type installed at the end of the SPM system rail hose.

2-DERRICK: 5 Ton Min.

3-PUMPS: Centrifugal and capable of maintaining 10 to 14 Bar offload pressure range on ship's manifold, at a discharge rate of 2400 C.M/Hour for gasoil fuel having a min. viscosity of 1.9 CST (9.5 CST at 20 deg C and 2.8 CST at 40 deg C).

4- Must be able to discharge cargo and take ballast simultaneously, or has permanent ballast about 25% of her D.W.T.

5-Ship's crew has to assist in mooring, and floating hose connection.

6-Max. draft loaded 13Mt.





**Appendix No. (b/5)**

**TRIPOLI OIL INSTALLATIONS  
TRIPOLI PORT REGULATIONS  
TERMINAL REQUIREMENTS FOR PRODUCT  
DELIVERY MARITIME VESSEL**

1. The discharge berth is an open sea berth. C.B.M.
2. The maritime vessel to be able to keep 25% of its deadweight as ballast and be ready to move under her own power all times.
3. The maritime vessel 's length not to be less than **600 Feet**
4. The maritime vessel to be equipped with centrifugal pumps capable of maintaining a steady manifold ship's pressure of **120 PSI**  
**(8,4 KGS / CM2)**
5. Maximum draught loaded **60 Feet**.
6. Seven tons derrick SWL.
7. Eight mooring ropes **120 fathoms** each.
8. Port and starboard anchors to have a minimum of ten shackles each.
9. Mid ship connections (**Portside 1 x 12 "inch 150 ASA**) .
10. Pumping is against a head of **300 Feet**.
11. Cargoes loaded on top of slops are not acceptable and an appropriate Dry and Clean Certificate to be issued by loading terminal.





**Appendix No. (b/6)**  
**ZAHRANI OIL INSTALLATIONS**  
**ZAHRANI PORT REGULATIONS**  
**TERMINAL REQUIREMENTS FOR PRODUCT**  
**DELIVERY MARTIME VESSEL**

Zahrani Terminal is an open sea berth ; only one berth in operation .  
berth # 2 ; only Motor Tankers are accepted.

**TANKERS SIZES & CARGO LIMITATIONS**

**Winter Season : ( From November 15 Till April 30 )**

Tankers arriving to Zahrani Oil Installations to Discharge Her Cargo , Their D.W.T. Must Not Exceed 80.000 Tons & Carrying a Maximum Cargo of 50.000 Tons .  
a ) Maximum Draft on Her Arrival 38 Feet Even keel .

b) Tanker's Manifold must be located at a Distance Must Not Exceed 435 Feet From The Stern .

**Summer Season : ( from May 1 Till November 15 )**

Tankers Arrive to Zahrani Oil Installations Discharge her Cargo .Their D.W.T. Maximum 100.000 Tons & carrying a Maximum Cargo of 60.000 Tons. Also Maximum 40 Feet even keel .

**TANKERS REQUIREMENTS**

- 1) Tankers Must Have S.B.T. (Segregated Ballast Tank )  
Or she Can Discharge Her Cargo & Take Ballast Simultaneously Without Any Contamination . As Per IMO Regulation, Quantity of Ballast 1/3 of her Deadweight.
- 2) Tankers Over 60.000 Tons, Must Have on Each Bow Anchor 12 European shackles.
- 3) Tanker Must Have on Her Port Side Manifold a 10 Tons Derrick.
- 4) Connection on port Side Manifold one Hose Diameter 12 Inch A.S.A.
- 5) The maritime vessel Must Have Enough Deckcrew (Minimum 7 Seamen) to Handle & Fasten The Tanker in a proper & Safe Manner.
- 6) Tankers Must Be Equipped With Centrifugal Pumps & to Reach a Pressure At Ship's Manifold of 7.5 KG/ Cm<sup>2</sup> During Unloading Operation .
- 7) Tankers Carrying Fuel Oil Cargo Must be Able to Heat Up The Cargo To a Temperature Between 125 F (50 C ) & 150 F ( 65 C ) Maximum .
- 8) Reciprocated Pumps Are Rejected
- 9) Tankers Must Not Drain Her Cargo Into Our Sea Line As Air Injected During This Operation May Cause The Hoses To Float & Buckle.





### Appendix No. (b/6) cont'd

#### ZAHRANI MOORING SYSTEM

Refer to The sketch attached To The Port Regulations :

Berth #2 IS An open Sea Berth .It IS AN M.B.M. ( Multiple Buoys Mooring ) 7 Cylindrical Buoys .

Tankers Must Be Equipped With The Following Mooring Systems .

1) A winch in Front of The Bridge Aft To Heave Up No. 1 & 7 Mooring Ropes Which Are The Beam Ropes .

2) Must have Minimum (12) Good Ropes, Proper Size & Standard Length 120 Fathoms Each.

3) Poop Mooring

- a) 2 Winches With Wires
- b) 5 Bitts

#### N.B.

1) No Overage Tankers Are Accepted At Z .O. Inst Tankers Over 20 Years Are Rejected.

2) No O.B.O. (Oil Bulk Ore) Accepted At Z .O. Inst .

