

国際協力事業団

No. 8

ポーランド共和国 商工省
プオック石油化学公社

ポーランド共和国
マゾビアン石油精製所
近代化・環境対策計画調査
報告書

(付属資料)

1995年1月

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ANNEX 1

RETROFITTING WORK ITEMS & SPECIFICATION FOR NO.1 CRUDE OIL DISTILLATION UNIT OF PETROCHEMIA PLOCK

**ANNEX 1 RETROFITTING WORK ITEMS & SPECIFICATION FOR NO.1
CRUDE OIL DISTILLATION UNIT OF PETROCHEMIA PLOCK**

**NOTE: This is prepared for the feasibility study only based on the
discussion between PPSA and JICA Study team.**

Retrofitting Item List
for NO.1 Crude Oil Distillation Unit
of PPSA

1. Rearrangement of Heat Exchangers

The purpose is to recover the heat from the products for saving energy.

Refer to Figures 4.8-1 and 4.8-2 as a proposed re-arrangement of Heat Exchangers.

The following factors are taken into consideration of this plan ;

(1)The number of products are reduced.

Since the quality of the some products increase, pumps and heat exchangers shall be replaced or newly installed.

(2)Stabilizer and Splitter are to be constructed.

Refer to Figure 4.8-1 as Flow Diagram.

(3)New product specifications are applied.

2. Installation of Air Preheater

This is to recover the heat from the Flue gas of Pc-1 and Pc-2 then to heat up the combustion air.

Refer to Figure 4.8-3 as a proposed flow scheme.

The existing Heaters are used as it is and connected each other by a flue gas duct. A Steam Air Heater and a Jung Strom will be installed.

3. O₂ Control in Flue Gas from Pc-1 and Pc-2

This is to control the Oxygen content in the Flue Gas in order to reduce excess air to the Heaters.

Dampers of each Heater will be driven by GO Motor.

4. Replacement to DCS

All the instrument will be replaced with electric ones from pneumatic ones.

5. Reducing Offensive Odor Substances in sewage

This is to reduce offensive odor from the drip funnel in NO.1 Unit.

The following 3 plans were discussed with PPSA during the second site visit.

(1) Seal of drip funnels

(2) Construction of a waste water stripping unit for NO.1 CDU

(3) Construction of a waste water unit for NO.1 and NO.2 CDU

Seal of drip funnels was selected by PPSA because this is a simple measure and less cost effective.

6. The treatment of Od-8 and Zb-3 emissions

PPSA requested the treatment of Od-8 and Zb-3 emissions because these 2 emissions contain 90 % of H₂S in NO.1 CDU.

Study team recommended an amine treating unit because the unit planned in NO.2 CDU, using NaOH solution to absorb H₂S, cannot be applied for NO.1 CDU.

7. Installation of Coalescers for the products of A12, A13 and A14 for CDU.

In order to prevent corrosion and deterioration of performance of catalysts in reactors downstream, new coalescers will be installed in CDU.

1. Rearrangement of Heat exchangers

(1/5)

Item	Main works	NOTE														
1.1 Stabilizer Unit & Splitter Unit	(1) Manufacturing of towers, vessels, heat exchangers, and pumps. (2) Piping (3) Electrical & Instrument (4) Painting & Insulation	Refer to Equipmet list. DCS System shall be applied.														
1.2 Rearrangement of Heat exchangers	The following 6 Heat exchangers will be newly manufactured and installed ; <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: right;">No.</th> </tr> </thead> <tbody> <tr> <td>(1) Ex-3(W-4 Reboiler)</td> <td style="text-align: right;">1</td> </tr> <tr> <td>(2) Ex-4(W-5 Reboiler)</td> <td style="text-align: right;">1</td> </tr> <tr> <td>(3) Ex-5(W-5 Feed Exchanger)</td> <td style="text-align: right;">1</td> </tr> <tr> <td>(4) Ex-6(R13 Product cooler)</td> <td style="text-align: right;">1</td> </tr> <tr> <td>(5) Ex-7(W-4 Overhead Condenser)</td> <td style="text-align: right;">1</td> </tr> <tr> <td>(6) Ex-8(W-5 Overhead Condenser)</td> <td style="text-align: right;">1</td> </tr> </tbody> </table>		No.	(1) Ex-3(W-4 Reboiler)	1	(2) Ex-4(W-5 Reboiler)	1	(3) Ex-5(W-5 Feed Exchanger)	1	(4) Ex-6(R13 Product cooler)	1	(5) Ex-7(W-4 Overhead Condenser)	1	(6) Ex-8(W-5 Overhead Condenser)	1	(1) Including Civil, , Foundation, Piping, Insulation and Painting around newly installed heat exchangers. (2) Refer to Equipment list.
	No.															
(1) Ex-3(W-4 Reboiler)	1															
(2) Ex-4(W-5 Reboiler)	1															
(3) Ex-5(W-5 Feed Exchanger)	1															
(4) Ex-6(R13 Product cooler)	1															
(5) Ex-7(W-4 Overhead Condenser)	1															
(6) Ex-8(W-5 Overhead Condenser)	1															
1.3 Piping work around the existing Heat exchangers	(1) Wm 2, Wm 5 a. To connect Shell Side Inlet to Tube Side Outlet of Wm 16.1, Wm 17.1, Wm 18.1 and Wm 19.1. b. To connect Shell Side Outlet to run down pipe line to tank. c. To connect Tube Side Inlet to Outlet Pipe of Eh-2. d. To connect Tube Side Outlet to Tube Side Inlet of Wm 10 and Wm 14.															

Item	Main works	NOTE
	<p>(2) Wm 3.3</p> <ul style="list-style-type: none"> a. To connect Shell Side Inlet to Discharge line of P 490. b. To connect Shell Side Outlet to Shell Side Inlet of Ch 3. c. To connect Tube Side Inlet to Tube Side Outlet of Wm 4.6. d. To connect Tube Side Outlet to Tube Side Outlet of Pd 1.2. <p>(3) Wm 14</p> <ul style="list-style-type: none"> a. To connect Shell Side Inlet to Shell Side Outlet of Wm 11. b. To connect Shell Side Outlet to Shell Side Inlet of Ch 6. c. To connect Tube Side Inlet to Tube Side Outlet of Wm 2. d. To connect Tube Side Outlet to Tube Side Inlet of Wm 12. <p>(4) Wm 6,8</p> <ul style="list-style-type: none"> a. To connect Shell Side Inlet to Discharge Line of P 590. b. To connect Shell Side Outlet to Shell Side Inlet of Ch 4. <p>(No change for Tube Side of Wm 6,8)</p> <p>(5) Wm 4.4</p> <ul style="list-style-type: none"> a. To connect Shell Side Inlet to Shell Side Outlet of Wm 15. b. To connect Shell Side Outlet to Reflux line going to #17 tray of W-7. <p>(No change for Tube Side of Wm 4.4)</p>	

Item	Main works	NOTE
1.4 Other Piping works	(1) To connect Suction line of P 10 to Inlet line of ex-A14 Side Cut Stripper. (2) To connect Outlet line of ex-A14 Side Cut Stripper to Suction line of P 490.	
1.5 Other works	(1) Isolation of ex-A12 Side Cut Stripper. (2) Revamping of #27 tray of W-7 (Accumlator tray.) (3) Isolation of Box Collers (4) Replacement of draw-off trays to valve trays W-1 : #12 W-2 : #45, #43, #29, #25, #19, #17, #11, #9 W-7 : #20, #14, #10	Instillation of blind plates after purging combustible gas and liquid. Instillation of blind plates after purging combustible gas and liquid. Connecting pipe shall be removed at the place where tray is replaced. As for A13 Fractions, no replacement is required because of its increased volume.
	(6) Extension of the steel structure for new condensers Sc-30 and Sc-31. (7) Replacement of the overhead pipe line of W-2 including the replacement of W-2 top nozzle.	Size of the new sturucure: 10 m(hight) × 6 m (length) × 9 m (width) New pipe line size : 30 inches

Item	Main works	NOTE
1.6 Replacement of Pumps	<p>(1) The following pumps shall be replaced due to the yield change.</p> <p>P19,20(to P190 A,B) P32,33(to P320 A,B) P47,48(to P470 A,B) P49,50(to P490 A,B) P51,52(to P510 A,B) P53,54(to P530 A,B) P37,38(to P370 A,B) P26,27(to P260 A,B) P39,40(to P390 A,B) P41,42(to P410 A,B) P43 (to P430)</p> <p>(2) The following pump shall be removed due to the reduction of number of products.</p> <p>P46</p>	<p>The following criteria were adopted:</p> <p>When the ratio is 0.6 to 1.1, the existing pump will be used after the modernization.</p>
1.7 Replacement or installation of new Heat Exchangers	<p>The following heat exchangers shall be replaced or newly installed:</p> <p>Sc-30 (Newly installed) 31 (Newly installed) Ch-1 (Replaced) Ch-30 (Newly installed) Ch-40 (Newly installed) Ch-41 (Newly installed) Ch-60 (Newly installed) Ch-70 (Newly installed)</p>	<p>Parallel with Sc-3</p> <p>Parallel with Ch-5</p> <p>Parallel with Ch-3</p> <p>Parallel with Ch-4</p> <p>Parallel with Ch-4</p> <p>Parallel with Ch-6</p> <p>Parallel with Ch-7</p>
1.8 Replacement of Od-2	<p>Due to the increase of the quantity of W-2 overhead gas and liquid, Od-2 is replaced to new one.</p>	<p>Refer to equipment list.</p>

Product Name	Pump No.	Flow rate (Table 3.1-6) ①	Corrected flow rate ① × 1.14	Flow rate (Table 4.6-3) ②	Ratio ② / ①	NOTE	
Crude Oil	P1,2	270	308	308	1.0	1. 1.14 is the correction factor by flow rate(308/270).	
D. Crude	P3,4	270	308	308	1.0		
W-1 Botm	P5,6,7	407.4	464.5	486.2	1.05		
W-2 Botm	P8,9	144	164.2	154.3	0.94		
W-1 Ref.	P15,16	55	62.7	50	0.80		
Od-1 Botm	P17,18	22	25	25.1	1.00		
Od-2 Botm	P19,20	26	29.6	122.9	4.15		Replace.(P190 A,B)
1st Ref.	P32,33	65	74.1	86	1.16		Replace.(P320 A,B)
2nd Ref.	P34,35	63	71.8	75	1.05		
3rd Ref.	P36	58.5	66.7	64	0.96		
A12	P46	12	13.7	—	—	Remove.	
A13⇒A12	P47,48	18	20.5	9.7	0.47	Replace.(P470 A,B)	
A14⇒P11	P49,50	16	18.2	36	2.0	Replace.(P490 A,B)	
A15⇒A13	P51,52	22	25.1	65.7	2.62	Replace.(P510 A,B)	
A16⇒A14	P53,54	17	19.4	28.0	1.44	Replace.(P530 A,B)	
W-7 1st	P10,11	61	69.5	61	1.00		
W-7 2nd	P37,38	24	27.4	24	0.88	Replace.(P370 A,B)	
P11⇒P10	P26,27	118.5	135.1	97	0.72	Replace.(P260 A,B)	
P13	P39,40	15	17.1	26	1.52	Replace.(P390 A,B)	
P14	P41,42	30	34.2	9.9	0.29	Replace.(P410 A,B)	
VR	P43	10	11.4	10.0	0.88	Replace.(P430)	
	P12,13,14	53	60.4	60.4	1.00		

2. Installation of Air Preheater

(1/1)

Item	Main works	NOTE
2.1 Steam Preheater & Jung Strom	(1) Manufacturing and installation of an Steam Preheater & a Jung Strom. (2) Piping (3) Electrical & Instrument (4) Painting & Insulation (5) Civil	Refer to Equipmet list. Shut down sequence below is required; Input • FDF Stop • IDF Stop • Jung Strom Stop Output • FDF Stop • IDF Stop • Jung Strom Operation (By air motor) • Fuel Oil & Gas Stop
2.2 Installation of Ducts	(1)Flue Gas Duct (2)Combustion Air Duct	Refer to Figure 4.8-3.
2.3 Replacement to Low Nox/Low O2 Burners	(1) 16 Sets for Pc-1 and 8 Sets for Pc-2 of the existing burners shall be replaced to Low NOX/Low O2 Burners.	
2.4 I.D.F./ F.D.F. Installation	(1) Manufacturing and installation of an IDF and FDF. (2) Piping (3) Electrical & Instrument (4) Painting & Insulation (5) Civil	Refer to Equipment list. As for IDF, Suction Duct shall be installed.
2.5 Stack	(1) Manufacturing and installation of an Stack. (2) Electrical (3) Painting & Insulation (4) Civil	30 m height and Concrete lining

3. O₂ Control in Flue Gas from Pc-1 and Pc-2

(1/1)

Item	Main works	NOTE
3.1 Oxygen Analyzer	(1) Procurement and installation of 2 Oxygen Analyzers. (2) Piping Including a 4 inch takeoff nozzle with flange for Oxygen analyzer. (3) Electrical & Instrument Including electric power supply and signal tubing work. (4) Painting & Insulation (5) Civil	• Specification (1) Zirconium Type (2) Explosionproof Type (3) Duct Insertion Type (4) Range 0~15% O ₂ in flue gas
3.2 Installation of GO Motors	(1) Procurement and installation of 2 GO Motors. Including Supply Air piping, I/P Converter installation and related signal tubing works.	• Specification (1) Damper shall be driven by GO Motor directly.
3.3 Installation of Furnace Pressure gauge	(1) Procurement and installation of 2 Furnace Pressure Gauges	• Specification (1) + 5 ~ - 20 mmH ₂ O (2) Input to DCS.
3.4 Revamping of Damper	(1) Damper shall be driven by both GO Motor and Manual. (2) Maintenance platform shall be installed. (3) Mechanical Stopper shall be installed to prevent Damper closure.	
3.5 Piping Works	(1) Electrical & Instrument (2) Painting & Insulation (3) Civil	

4. Replacement to DCS

(1/2)

4.1 Principle

(1) The area of replacing to DCS

All the existing pneumatic instruments will be replaced to DCS.
(Refer to Attachment 1 for the existing Instrument List)

(2) Replacement of transmitter

The existing transmitters will be replaced to electrical transmitters.
(Refer to Case 2 of Table 4.8-6)

(3) Control room

The existing control room will be used.
The existing instrument panels will be replaced with flat panels.

(4) The capacity and space of Sub-station

There is enough capacity and space of the existing Sub-station.
(No-revamping work is required for power supply to DCS and there is enough space for Un-interrupted Power Supply - UPS)

4.2 Retrofitting works

Item	Main works	NOTE
(1)Control Room / Sub-Station		
1) DCS	(1) Procurement and installation of DCS	
2) UPS	(1) Procurement and installation of UPS	
3) Sub-Station	(1) Connection to UPS (2) Connection to DCS	
4) Modification of Control Room	(1) Changing to Free access floor. (2) Installation of Distribution Panels and Joint Boxes.	Refer to Figure 1.
5) Lighting and Partition of Control Room	(1) To be clarified by PPSA.	
(2) Site Works	(1) Installation of electric transmitter. (2) Modification of signal tube. (3) Installation of I/P Converter. (4) Cable Duct Installation	From pneumatic to electric transmitter Refer to Figure 2. Including stanchion. Refer to Figure 3. Pipe rack

Item	Main works	NOTE
	<p>(5) Cable Placing</p> <p>a. Transmitter ~ Site Joint Box</p> <p>b. Site Join Box ~ Control room Joint Box</p> <p>c. Control room ~ DCS Joint Box</p> <p>(6) Site Joint Box Installation</p>	

4.3 Control Loops for new Stabilizer and Splitter

(1)Temperature	10
(2)Flow	10
(3)Pressure	6
(4)Level	6
Total	32

SPECIFICATION FOR REPLACEMENT OF DCS

Figure 1 Conceptual scheme

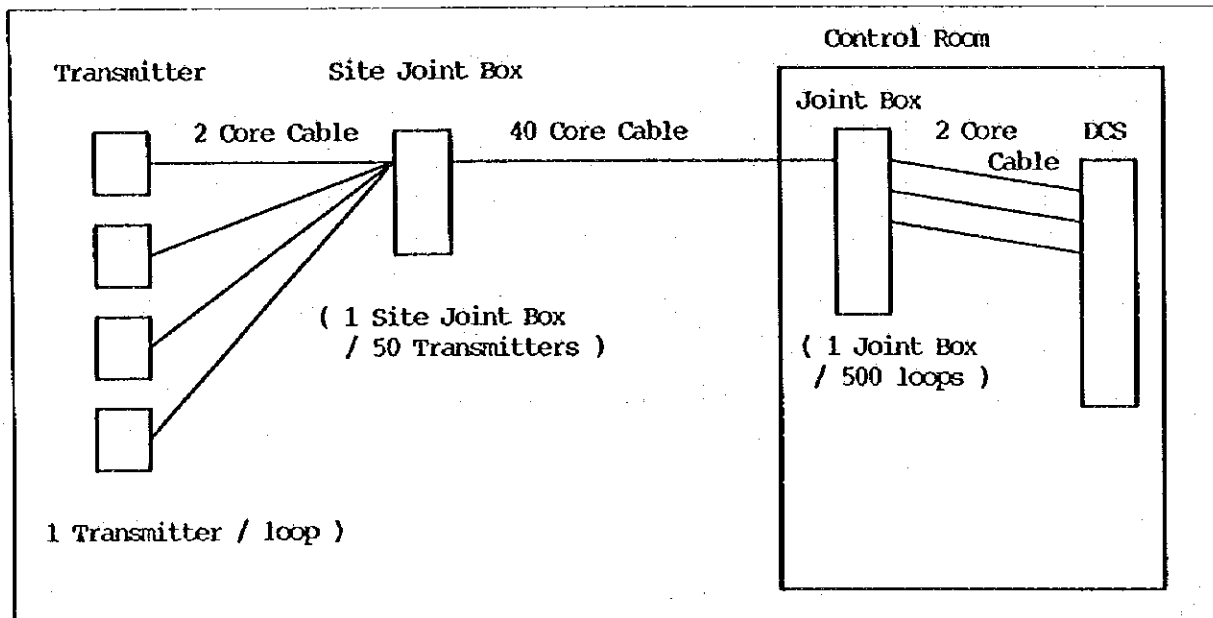


Figure 2 Modification of lead piping

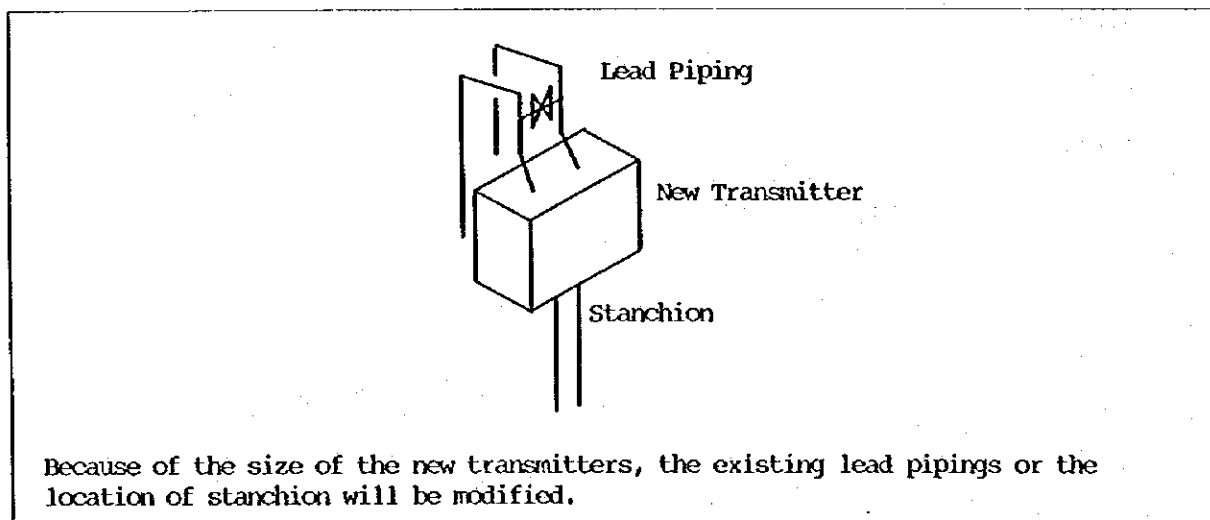
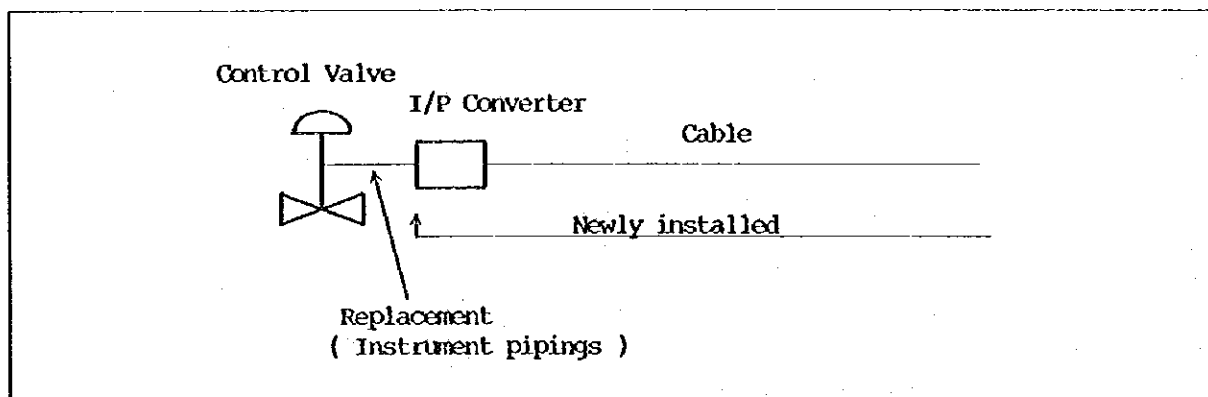


Figure 3 Modification around control valves



5. Reducing offensive odor substances in sewage

(1/1)

Item	Main works	NOTE
5.1 Sealing of drip funnels	(1) Installation of short pipes as illustrated in Figure 4.6-2.	8 drip funnels shall be sealed by short pipes as illustrated in Figure 4.6-2.

6. The treatment of Od-8 and Zb-3 Emissions

(1/1)

Item	Main works	NOTE
6.1 Gas compression section	<p>(1) Installation of gas compression section in Figure 4.8-4 in Report.</p> <p>Suction drum 1 Discharge drum (with SV) 1 Cooler 1 Compressor 2 O2 Analyzer (with shut down sequence) 1</p> <p>(2) Zb-3 shall be sealed by N2 to prevent air from entering into the gas.</p> <p>(3) A safety valve shall be installed at Zb-3.</p>	<p>Refer to Equipment List.</p> <p>Shut down sequence is required when</p> <ul style="list-style-type: none"> • Pressure of the Suction becomes below 0.0 kg/cm². • O2 content in the gas of Suction Drum becomes over 2.0 vol %. <p>Spill back line with a control valve is required for maintaining suction pressure of the Compressor.</p> <p>Zb-3 will be controlled under the positive pressure.</p>
6.2 Amine Treating Unit	<p>(1) Amine Treating Unit</p> <p>Feed Gas flow rate 140 nm³/h (240 kg/h)</p>	
6.3 H2S rich gas transfer line	<p>(1) H2S rich gas transfer line to the existing Clause Unit</p> <p>Distance 3 km</p>	<ul style="list-style-type: none"> • Steam trace & Insulation • Free drain

7 Installation of Coalescers for Products

(1/1)

Item	Main works			NOTE
7.1 Installation of Coalescers	(1) CDU			(1) Refer to Equipment List.
		Estimated flow (t/h)	Design flow(t/h)	
	A12	9.7	15	(2) Process coalescer will be used with strainer.
	A13	65.7	80	
	A14	28.0	35	(3) 2 Strainers for 1 Coalescer shall be required.
				(4) Pressure gauge to measure the differential pressure is required.

EQUIPMENT LIST

(HEAT EXCHANGER)

(1/2)

MAZOVIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	TYPE	DUTY GJ/h	SURFACE AREA		TUBE SIDE			SHELL SIDE			MEMO
					ft ²	m ²	MATERIAL	DES PRES Mpa	DES TEMP °C	MATERIAL	DES PRES Mpa	DES TEMP °C	
1	Re-arrangement of Heat Exchanger (Including Stabilizer & Splitter Unit)												
EX-3	W4 REBOILER		BEU	13.0	230X1		C.S.	—	275	C.S.	—	190	1 100 φ X 3 500L
EX-4	W5 REBOILER		BEU	6.3	150X1		C.S.	—	190	C.S.	—	150	900 φ X 3 500L
EX-5	W4 FEED EXCHANGER		BEU	4.0	90X1		C.S.	—	150	C.S.	—	120	550 φ X 6 000L
EX-6	R13 PRODUCT COOLER		BEU	2.5	45X1		C.S.	—	60	C.S.	—	120	500 φ X 3 500L
EX-7	W4 O/H CONDENSER		BEU	8.4	170X1		C.S.	—	60	C.S.	—	120	750 φ X 6 000L
EX-8	W5 O/H CONDENSER		BEU	10.5	210X1		C.S.	—	60	C.S.	—	120	850 φ X 6 000L
SC-30	W-2 O/H CONDENSER				245/205		C.S.						SAVE SPEC. AS SC-3
SC-31	W-2 O/H CONDENSER				245/205		C.S.						SAVE SPEC. AS SC-3
CH-30	P11 COOLER				136		C.S.						SAVE SPEC. AS CH-3
CH-40	A13 COOLER				136		C.S.						SAVE SPEC. AS CH-4
CH-41	A13 COOLER				136		C.S.						SAVE SPEC. AS CH-4

EQUIPMENT LIST

(HEAT EXCHANGER)

(2/2)

MAZOVIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	TYPE	DUTY		SURFACE AREA		TUBE SIDE				SHELL SIDE				MEMO
				GT/h	m ²	MATERIAL	DES PRES MPa	DES TEMP °C	MATERIAL	DES PRES MPa	DES TEMP °C	MATERIAL	DES PRES MPa	DES TEMP °C		
Ch-60		P12 COOLER			136	C.S										SAVE SPEC. AS Ch-6
Ch-70		P13 COOLER			136	C.S										SAVE SPEC. AS Ch-7
2	Installation of Air Preheater															
		STEAM AIR HEATER	FIN		2,200	C.S			STEAM In : 300			AIR In : 20				18.0 ata Steam
									Out: 230			Out: 120				
		JUNG STEAM	19 - HR-650		1,105	C.S			AIR In : 120			FLUE GAS In : 400				
									Out: 200			Out: 240				
3	Installation of Amine Treating Unit															
EX-600		Gas Cooler	BEU		100	C.S										

EQUIPMENT LIST

(COLUMN & DRUM)

MAZOVIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	No. REQ'D	DIMENSION		SHELL MATERIAL	DES PRES		DES TEMP		MEMO	Estimated Wall thickness (mm)
				I.D. mm	T.L. mm		MPa	°C				
1	Stabilizer & Splitter Unit											
	W4	STABILIZER	1	TOP 1 250 X	16,000	C.S.	1.38 & FV	190		40 VALVE TRAYS	14	
				BTM 1 900 X	17,000							
	O2-201	STABILIZER O/H RECEIVER	1	1 500 X 3 500		C.S.	1.38 & FV	120		HORIZONTAL , WITH WATER BOOT	14	
				BOOT 300 X 450								
	W5	SPLITTER	1	1 700 X 22,000		C.S.	0.45 & FV	150		24 VALVE TRAYS	14	
	O2-202	SPLITTER O/H RECEIVER	1	1 500 X 4 000		C.S.	0.45 & FV	120		HORIZONTAL , WITH WATER BOOT	14	
				BOOT 400 X 600								
2	Amine Treating Unit											
	W600	Suction Drum	1	1 000 X 2 000		C.S	5.0 & FV				10	
	W601	Discharge Drum	1	1 000 X 2 000		C.S	10.0 & FV				10	
3	Replacement of vessel											
	O2-2	W-2 O/H RECEIVER	1	4 500 X 14 500		C-S	10.0 & FV			2 level controllers with level gauges and 1 pressure controller with pressure gauge		

EQUIPMENT LIST

(PUMP & BLOWER)

MAZOVIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	No. REQ'D	TYPE	FLUID	CASING MATERIAL	CAPACITY m ³ /h	DENSITY kg/m ³	TEMP °C	DIFF. PRESS MPa	HEAD m	For Feasibility Study Only	
												Motor Rating JEWEL188 (kw)	NEVA MGI HF (kw)
1	Stabilizer & Splitter Unit												
	P201 A,B	W4 O/H POMP	2	CENTRIF.	HC		39.7	538	38		10	1.5	2(1.5)
	P202 A,B	W5 O/H POMP	2	CENTRIF.	HC		33.8	606	47		10	1.5	2(1.5)
	P203 A,B	W5 BOTTOM POMP	2	CENTRIF.	HC		22.1	615	116		10	1.1	1.5(1.1)
2	Re-arrangement of Heat Exchangers												
	P510 A,B	A13 PRODUCT POMP	2	CENTRIF.	HC		95.3	690	183		10	3.7	5(3.7)
	P490 A,B	P11 PRODUCT POMP	2	CENTRIF.	HC		48.5	742	261		10	2.2	3(2.2)
	P190 A,B		2	CENTRIF.	HC		185	742					
	P320 A,B		2	CENTRIF.	HC		130						
	P470 A,B		2	CENTRIF.	HC		12	770	63				

EQUIPMENT LIST

(2/5)

(PUMP & BLOWER)

MAZOVIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	No. REQ'D	TYPE	FLUID	CASING MATERIAL	CAPACITY m ³ /h	DENSITY kg/m ³	TEMP °C	DIFF. PRES MPa	HEAD m	For Feasibility Study Only	
												Head (m)	Motor Rating JEMLI88 (kw)
	P530 A,B		2	CENTRIF.	HC	C.S	42	834					
	P370 A,B		2	CENTRIF.	HC	C.S	36						
	P260 A,B		2	CENTRIF.	HC	C.S	144.5	863					
	P390 A,B		2	CENTRIF.	HC	C.S	39	912					
	P410 A,B		2	CENTRIF.	HC	C.S	15	929					
	P430		1	CENTRIF.	HC	C.S	15	933					
	P46	REMOVAL											

EQUIPMENT LIST

(3/3)

(PUMP & BLOWER)

MAZOVAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	No. REQ'D	TYPE	FLUID	CASING MATERIAL	CAPACITY n m ³ /h	DENSITY kg/m ³	TEMP °C	DIFF. PRES MPa	HEAD m	For Feasibility Study Only	
												Head (m)	Motor Rating JEWELL88 (kw)
4	INSTALLATION OF AIR PREHEATER												
		MOTOR FOR JUNG STROM	1		AIR/FLUE GAS							2.2	
		SOOT BLOWER AT JUNG STROM	1									0.2	
		FORCED DRAFT FAN	1	CENTRIF.	AIR	C.S.	200,000	1.19	-20			0.55	500
		INDUCED DRAFT FAN	1	CENTRIF.	FLUE GAS	C-S	350,000	0.71	240			0.33	400
		CO MOTOR	2	AIR DRIVEN									
5	Air Treating Unit												
	CS00 A,B	Sour Gas Compressor	2		HC		210		40 ~45	1.0		7.5	(7.5)

EQUIPMENT LIST (COALESCER & STRAINER)

MANGOLIAN REFINERY

No.	EQUIPMENT ITEM NUMBER	SERVICE	No. REQ'D	DIMENSION I.D. mm X T.L. mm	SHELL MATERIAL	DES PRES		DES TEMP		DES FLOW		MEMO	Estimated Wall thickness (mm)
						Mpa		°C		t/h			
1	CO-1												
	ST-1 A,B	AL2 STRAINER	2		C.S					15.0		SWITCHOVER TYPE	
	CO-1	AL2 COALESCER	1		C.S					15.0		PROCESS COALESCER	
	ST-2 A,B	AL3 STRAINER	2		C.S.					80.0		SWITCHOVER TYPE	
	CO-2	AL3 COALESCER	1		C.S					80.0		PROCESS COALESCER	
	ST-3 A,B	AL4 STRAINER	2		C.S					35.0		SWITCHOVER TYPE	
	CO-3	AL4 COALESCER	1		C.S.					35.0		PROCESS COALESCER	

INSTRUMENT NUMBER LIST (TEMPERARURE) 1 of 5
 (Instruments of new Stabilizer and Splitter Section are not included.)

NO	Number	Service	Note
1	TR-6923	Wn-4.2 Shell Side Outlet	
2	TIC-3120	Pd-1.2 Tube Side Inlet	
3	TIC-3121	Pd-1.1 Tube Side Inlet	
4	TI-3211	Pd-2 Tube Side Outlet	
5	TI-3220	CH-3.1 Tube Side Outlet	
6	TI-3415	Eh-2 Crude Oil Outlet	
7	TI-3315	Eh-1 Crude Oil Outlet	
8	TIC-4491	Wn-9 Tube Side Outlet	
9	TIC-6321	Wn-14 Tube Side Outlet	
10	TI-4490	Wn-10 Tube Side Outlet	
11	TI-487	Wn-5 Tube Side Inlet	
12	TIC-6222	Wn-15 Shell Side Outlet	
13	TR-6420	Wn-16.1 Tube Side Outlet	
14	TRC-6430	Wn-17.1 Tube Side Outlet	
15	TRC-6322	Wn-16.2/Wn-17.2 Shell Side Outlet	
16	TR-6323	Wn-18.2/Wn-19.2 Shell Side Outlet	
17	TR-6460	Wn-16.1/Wn17.1 Tube Side Outlet	
18	TR-6440	Wn-18.1 Tube Side Outlet	
19	TR-6450	Wn-19.1 Tube Side Outlet	
20	TR-6470	Wn-18.1/Wn19.1 Tube Side Outlet	
21	TI-4211	W-1 Overhead Gas	
22	TRC-4212	W-1 Overhead Gas	
23	TRC-4230	W-1 Overhead Reflux	With Oriffice
24	TR-4231	W-1 Overhead Reflux	
25	TR-4232	W-1 Feed	
26	TI-4405	W-2 Overhead Gas	

INSTRUMENT NUMBER LIST (TEMPERATURE)
 (Instruments of new Stabilizer and Splitter Section is not included.)

2 of 5

NO	Number	Service	Note
27	TRCA-4404	W-2 Top Reflux	
28	TR-4401	W-2 Top Reflux	
29	TR-4440	A ₂ Draw off	
30	TR-4450	A ₃ Draw off	
31	TR-4460	A ₄ Draw off	
32	TR-4470	A ₅ Draw off	
33	TR-4480	A ₆ Draw off	
34	TR-4417	W-2 Side Reflux (Upper)	
35	TR-4420	W-2 Side Reflux (Middle)	
36	TR-4423	W-2 Side Reflux (Lower)	
37	TIC-6321	Wm-14 Tube Side Outlet	
38	TR-4427	W-2 Bottoms	
39	TI-4443	W-3 Draw Off (A ₂)	
40	TI-4453	W-3 Draw Off (A ₃)	
41	TI-4463	W-3 Draw Off (A ₄)	
42	TI-4473	W-3 Draw Off (A ₅)	
43	TI-4483	W-3 Draw Off (A ₆)	
44	TRC-4140	Pc-1 Coil Outlet	
45	TR-4170	Pc-1 Coil Outlet	
46	TR-4171	Pc-1 Coil Outlet	
47	TR-4172	Pc-1 Coil Outlet	
48	TR-4173	Pc-1 Coil Outlet	
49	TR-4174	Pc-1 Coil Outlet	
50	TR-4175	Pc-1 Coil Outlet	
51	TR-4130	Pc-1 Convection Section	
52	TR-4131	Pc-1 Convection Section	
53	TR-4132	Pc-1 Convection Section	

INSTRUMENT NUMBER LIST (TEMPERARURE)
 (Instruments of new Stabilizer and Splitter Section is not included,)

3 of 5

NO	Number	Service	Note
54	TR-4133	Pc-1 Convection Section	
55	TR-4134	Pc-1 Convection Section	
56	TR-4135	Pc-1 Convection Section	
57	TR-4113	Pc-1 Convection (Steam Coil Outlet)	
58	TR-4120	Pc-1 Wall (Top)	
59	TR-4121	Pc-1 Wall (Top)	
60	TR-4122	Pc-1 Wall (Top)	
61	TR-4123	Pc-1 Wall (Top)	
62	TR-4124	Pc-1 Wall (Top)	
63	TR-4125	Pc-1 Wall (Top)	
64	TR-4150	Pc-1 Wall (Middle)	
65	TR-4151	Pc-1 Wall (Middle)	
66	TR-4152	Pc-1 Wall (Middle)	
67	TR-4153	Pc-1 Wall (Middle)	
68	TR-4154	Pc-1 Wall (Middle)	
69	TR-4155	Pc-1 Wall (Middle)	
70	TRC-4141	Pc-1 Fuel Gas	
71	TR-4117	Fuel Oil	
72	TI-6211	W-7 Overhead Gas	
73	TI-6212	W-7 Overhead Gas	
74	TRC-6231	W-7 Side Reflux (Upper) Draw Off	
75	TR-6240	W-7 P ₁ Draw Off	
76	TR-6250	W-7 P ₁ Draw Off	
77	TR-6260	W-7 P ₁ Draw Off	
78	TR-6219	W-7 Side Reflux (Middle) Return	
79	TR-6218	W-7 Side Reflux (Middle) Draw Off	
80	TR-6270	W-7 Vacuum Residue Draw Off	

INSTRUMENT NUMBER LIST (TEMPERARURE)
 (Instruments of new Stabilizer and Splitter Section is not included.)

4 of 5

NO	Number	Service	Note
81	TI-6244	W-8 P ₁ , Draw Off	
82	TI-6254	W-8 P ₁ , Draw Off	
83	TI-6264	W-8 P ₁ , Draw Off	
84	TR-6113	Pc-2 Convection (Steam Coil Outlet)	
85	TR-6114	Pc-2 Atmospheric Residue Feed	
86	TR-6164	Pc-2 Convection	
87	TR-6160	Pc-2 Atmospheric Residue Outlet	
83	TR-6165	Pc-2 Atmospheric Residue Outlet	
84	TRC-6140	Pc-2 Atmospheric Residue Outlet	
85	TRC-6112	Pc-2 Fuel Oil (Pc-2 Temp. Control)	
86	TR-6117	Pc-2 Fuel Oil	
88	TI-6882	ChS-2.1 Vacuum Residue Outlet	
89	TI-6883	ChS-2.2 Vacuum Residue Outlet	
90	TR-6880	ChS-1.1 Vacuum Residue Outlet	
91	TR-6881	ChS-1.2 Vacuum Residue Outlet	
92	TI-2140	Cooling Water	
93	TR-2150	Sc-10 Cooling Water Outlet	
94	TI-4320	Sc-5d,g Liquid	
95	TI-4321	Sc-4d,g Liquid	
96	TI-4340	Sc-3d,g Liquid	
97	TI-4311	Sc-2d,g Liquid	
98	TI-4310	Sc-1d,g Liquid	
99	TI-4412	Ch-12 Shell Side Inlet	
100	TI-4416	Ch-12 Shell Side Outlet	
101	TI-4413	Ch-10 Shell Side Inlet	
102	TI-4419	Ch-10 Shell Side Outlet	
103	TI-4414	Ch-11 Shell Side Inlet	

INSTRUMENT NUMBER LIST (TEMPERARURE)
 (Instruments of new Stabilizer and Splitter Section is not included.)

5 of 5

NO	Number	Service	Note
104	TI-4422	Ch-11 Shell Side Outlet	
105	TI-4425	Ch-9A Shell Side Outlet	
106	TI-4435	Ch-13 Shell Side Outlet	
107	TI-682	Ch-13 Shell Side Inlet	
108	TI-4488	Ch-5 Shell Side Outlet	
109	TI-4487	Ch-5 Shell Side Outlet	
110	TI-6257	Ch-7 Shell Side Outlet	
111	TI-6266	Ch-8 Shell Side Outlet	
112	TI-685	Ch-14 Shell Side Outlet	
113	TI-4146	Z-11	
114	TI-4147	Z-12	

INSTRUMENT NUMBER LIST (PRESSURE)
 (Instruments of new Stabilizer and Splitter Section are not included.)

1 of 2

NO	Number	Service	Note
1	PR-3112	P1/P2 Discharge	
2	PIC-3116		
3	PIC-3117		
4	PI-3123	Pd.1.2 Tube Side Outlet	
5	PRC-3210	P-59/P-60 Discharge	
6	PIC-3513	Zb-1	
7	PRCA-3512	Eh-2	
8	PDC-3411	Emulsion Valve for Eh-2	
9	PDC-3311	Emulsion Valve for Eh-1	
10	PIA-3316	Eh-1 Outlet	
11	PIA-4013	Wn-2 Tube Side Inlet	
12	PIA-4014	Wn-5 Tube Side Inlet	
13	PRA-4403	W-2 Top	
14	PIC-4410	Pc-1 Recycle	
15	PI-4142	Pc-1 Convection Section	
16	PR-4118	Pc-1 Convection Section Steam Inlet	
17	PD-4101	Pc-1 Draft	
18	PD-4102	Pc-1 Draft	
19	PD-4103	Pc-1 Draft	
20	PD-4104	Pc-1 Draft	
21	PD-4105	Pc-1 Draft	
22	PD-4106	Pc-1 Draft	
23	PIC-4312	Od-1	
24	PIC-4322	Od-2	
25	PIC-5320	Od-3	
26	PaR-6213	W-7 Top	
27	PaR-6220	W-7 Flash Zone	

INSTRUMENT NUMBER LIST (PRESSURE)
 (Instruments of new Stabilizer and Splitter Section is not included.)

2 of 2

NO	Number	Service	Note
28	PR-6118	Pc-2 Preheat Steam Outlet	
29	PI-6101		
30	PI-6102		
31	PIC-6490	Vacuum Residue to ChS-2.1/2.2	
32	PIC-6810	Steam to Ejector	
33	PI-2130	Cooling Water Sc-10 Inlet	
34	PI-2137	Cooling Water Sc-10 Outlet	
35	PIC-2131	Cooling Water Ch-10,11,12	
36	PI-2140	Steam Header	
37	PI-2145	Steam Header	
38	PRA-2215	Steam Header	
39	PIA-4014	Wm-5 Tube Side Inlet	
40	PRA-4403	W-2 Top	
41	PIC-4410	Pc-1 Recycle	
42	PI-4142	Pc-1 Convection Section	
43	PR-4118	Pc-1 Convection Section Steam Inlet	
44	PD-4101	Pc-1 Draft	
45	PD-4102	Pc-1 Draft	
46	PD-4103	Pc-1 Draft	
47	PD-4104	Pc-1 Draft	
48	PD-4105	Pc-1 Draft	
49	PD-4106	Pc-1 Draft	
50	PIC-4312	Od-1	
51	PIC-4322	Od-2	
52	PIC-5320	Od-3	
53	PaR-6213	W-7 Top	
54	PaR-6220	W-7 Flash Zone	

INSTRUMENT NUMBER LIST (FLOW)

1 of 3

(Instruments of new Stabilizer and Splitter Section are not included.)

NO	Number	Service	Note
1	FRC-3113	P-1/P-2 Discharge (Crude Oil)	
2	FR-3115	Crude Oil to Wm-1.1	
3	FR-3122	Pd-1.2 Tube Side Outlet	
4	FRC-2326	P-83/P-84 Discharge	
5	FR-2420	P-3/P-4 Discharge	
6	FRC-3216	Water to Eh-1	
7	FRC-3217	Water to Eh-2	
8	FRC-4011	Wm-2 Tube Side Inlet	
9	FRC-4012	Wm-5 Tube Side Inlet	
10	FRC-4220	Bottom Recycle to W-1	
11	FR-4015	W-2 Upper Reflux	Confirm FR-4415 in P&ID A-40. (Maybe same Flow Meter)
12	FR-4418	W-2 Middle Reflux	
13	FR-4421	W-2 Lower Reflux	
14	FRC-4430	W-2 Stripping Steam	
15	FRC-4431	W-3 Stripping Steam to Atmosphere	
16	FRC-4441	W-3 Stripping Steam	
17	FRC-4451	W-3 Stripping Steam	
18	FRC-4461	W-3 Stripping Steam	
19	FRC-4471	W-3 Stripping Steam	
20	FRC-4481	W-3 Stripping Steam	
21	FRC-4112	Steam to Pc-1	
22	FR-2610	Od-1 Off Gas	
23	FRC-6224	W-7 Upper Reflux	
24	FRC-6225	W-7 Top Reflux	
25	FRC-6272	Stripping Steam to W-7	
26	FRC-6231	W-8 Stripping Steam to Atmosphere	
27	FRC-6242	Stripping Steam to W-8	

INSTRUMENT NUMBER LIST (FLOW)

2 of 3

(Instruments of new Stabilizer and Splitter Section are not included.)

NO	Number	Service	Note
28	FRC-6252	Stripping Steam to W-8	
29	FRC-6262	Stripping Steam to W-8	
30	FRC-6141	Fuel Oil to Pc-2	
31	FR-6278	Steam to Ejector (North)	
32	FR-6276	Steam to Ejector (Middle)	
33	FR-6275	Steam to Ejector (South)	
34	FRC-6280	Cooling Water to Ejector Condenser	
35	FR-6282	Cooling Water to Sc-1/Sc-2	
36	FR-6283	Cooling Water to Ch-10/Ch-11/Ch-12	
37	FRC-4402	W-2 Top Reflux (A ₁)	
38	FRC-4352	A ₁ to NO.2 UNIT	
39	FR-6279	Od-8 Condensate to Z-8	
40	FRC-6267	P-42/P-43 Discharge (P ₁)	
41	FRC-6410	P-12/P-13 Discharge (Vacuum Residue)	
42	FRC-6480	P-13/P-14 Discharge (Vacuum Residue)	
43	FRC-4429	Atmospheric Residue to Pc-2	
44	FRC-4474	Atmospheric Residue to Chs-1.2/1.2	
45	FRC-4110	W-1 Bottoms Oil to Pc-1(P-7/8/9 Dis)	
46	FRC-6235	Ch-9A Outlet (P ₁ , Rundown)	
47	FRC-4486	Ch-5 Outlet (A ₁ , Rundown)	
48	FRC-6247	Ch-6 Outlet (P ₁ , Rundown)	
49	FRC-6257	Ch-7 Outlet (P ₁ , Rundown)	
50	FRC-4446	P-46/47 Discharge (A ₁ , Rundown)	
51	FRC-4456	P-47/48 Discharge (A ₁ , Rundown)	
52	FRC-4466	P-49/50 Discharge (A ₁ , Rundown)	
53	FRC-4476	P-51/52 Discharge (A ₁ , Rundown)	
54	FRC-6111	P-98/99 Dis. (Fuel Oil for Pc-2)	

INSTRUMENT NUMBER LIST (FLOW)
 (Instruments of new Stabilizer and Splitter Section are not included.)

3 of 3

NO	Number	Service	Note
55	FRC-4111	P-96/97 Dis. (Fuel Oil for Pc-1)	
56	FR-2260	Steam to Collector	
57	FR-2210	Steam to 1.7 MPa Header	
58	FRC-2901	Steam to Collector	
59	FRC-2902	Instrument Air	
60	FR-2320	Steam to Collector	
61	FRC-2310	Steam to Collector	
62	FRC-2203	Maintenance Nitrogen	
63	FRC-7140	P-94/95 Discharge (A. Rundown	

INSIRUMENT NUMBER LIST (LEVEL)

1 of 2

(Instruments of new Stabilizer and Splitter Section are not included.)

NO	Number	Service	Note
1	LI-3213	Z-8 (Ejector Steam Condensate)	
2	LIA-3218	Ot-1	
3	LICA-3514	Zb-1	
4	LICA-3410	Eh-2 Water	
5	LICA-3310	Eh-1 Water	
6	LICA-4240	W-1 Bottom	
7	LICA-4428	W-2 Bottom	
8	LICA-4442	W-3 (A ₁)	
9	LICA-4452	W-3 (A ₂)	
10	LICA-4462	W-3 (A ₃)	
11	LICA-4472	W-3 (A ₄)	
12	LICA-4482	W-3 (A ₅)	
13	LICA-4313	Od-1	
14	LICA-4323	Od-2	
15	LICA-4314	Od-1 (Water)	
16	LICA-4324	Od-2 (Water)	
17	LAH-5321	Od-3	
18	LICA-6271	W-7 Bottom	
19	LCA-6241	W-8 (P ₁₁)	
20	LCA-6251	W-8 (P ₁₂)	
21	LCA-6261	W-8 (P ₁₃)	
22	LIC-6233	Zb-2	
23	LAH-6279	Z-15	
24	LI-6274	Od-8	
25	LICA-6273	Od-8	
26	LICA-4144	Z-11	
27	LICA-4145	Z-12	

INSTRUMENT NUMBER LIST (LEVEL)

(Instruments of new Stabilizer and Splitter Section are not included.)

NO	Number	Service	Note
28	LIA-3010	Zm-1	
29	LIA-3011	Zm-2	
30	LIA-3012	Zm-3	
31	LIA-3219	Zb-3	
32	LIC-7130	Zb-4.2	
33	LIC-72304	Zb-4.2	
34	LICA-2020	E-41	
35	LIA-3205	Z-6	

PLANT COST ESTIMATION

(Unit : US\$)

	Equipment & Material		Field work	EPS-MH and expense	Sub total	Import duty	VAT	Total
	Foreign	Local						
1								
	Rearrangement of heat exchanger							
		377,340	139,470	50,440	567,250	-	124,795	
		392,306	42,100	85,370	519,776	-	113,354	
		223,300	27,230	9,010	259,540	-	57,099	
		-	4,100	-	4,100	-	900	
		-	-	-	1,350,666	-	296,148	1,646,814
		-	-	-	2,013,190	-	442,907	2,456,097
	Sub-Total							
		-	1,762,640	250,550	2,013,190	-	442,907	2,456,097
	2) Piping, electrical, instrument and misc. work							
		-	257,010	38,550	295,560	-	65,023	360,583
		992,946	2,232,550	433,920	3,659,416	-	804,078	4,463,494
		-	481,950	48,348	795,600	-	175,032	970,632
	3) Isolation and Tray replacement							
		-	270,063	10,380	337,643	-	74,281	411,924
		-	57,200	10,380	337,643	-	74,281	411,924
	Total of 1							
		-	265,302	48,348	795,600	-	175,032	970,632
	Installation of heater for w4 and w5							
		-	270,063	10,380	337,643	-	74,281	411,924
	Reduction of heat exchanger Ex-3 & Ex-4 and related work							
		-	424,750	37,968	457,957	-	100,751	558,708
	Actual investment cost							
		-	424,750	37,968	457,957	-	100,751	558,708
	(New heater installation and Heat exchanger (ex-3 & 4) and related work reduction)							
	Installation of air preheater							
		306,250	21,500	39,500	325,000	-	71,500	396,500
		306,250	107,000	45,750	459,000	150,063	33,605	642,668
		-	18,000	33,600	275,600	-	60,632	336,232
		-	174,500	13,800	188,300	-	41,426	229,726
		-	21,800	16,800	206,600	-	45,452	252,052
		-	55,780	3,480	59,260	-	13,037	72,297
		-	180,600	24,160	204,760	-	45,047	249,807
		-	129,000	12,900	141,900	-	31,218	173,118
		306,250	708,180	189,990	1,860,420	150,063	341,917	2,352,400
	Total of 2							

Note: 1. Field work for 2-1) to 2-5) is including foundation, steel structure, erection, insulating, painting and misc. work.
 2. Cost of Jungstrom is applied to be supplied by Japanese vendor.

(Unit : US\$)

	Equipment & Material		Field work	EPS-MH and expense	Sub total	Import duty	VAT	Total
	Foreign	Local						
3	O ₂ control in flue gas from Pc-1 and Pc-2							
	-	60,000	7,600	-	67,600	-	14,872	82,472
	15,400	-	9,000	-	24,400	7,546	1,980	33,926
	-	5,000	3,000	-	8,000	-	1,760	9,760
	-	-	20,000	-	20,000	-	4,400	24,400
	-	-	12,000	-	12,000	-	2,640	14,640
	-	-	-	19,800	19,800	-	4,356	24,156
	15,400	65,000	51,600	19,800	151,800	7,546	30,008	189,354
4	Replacement to D.C.S							
	633,000	-	-	-	633,000	310,170	-	943,170
	-	606,500	-	-	606,500	-	133,430	739,930
	-	187,700	-	-	187,700	-	41,294	228,994
	-	-	242,800	-	242,800	-	53,416	296,216
	-	-	-	214,080	214,080	-	47,098	261,178
	633,000	794,200	242,800	214,080	1,884,080	310,170	275,238	2,469,488

Note: 1. DCS w/back-up power system will be supplied by European vendor.

2. Cost of modification of existing control room is included in 4-4) above.

	Equipment & Material		Field work	EPS-MH and expense	Sub total	Import duty	VAT	Total
	Foreign	Local						
5	-	6,400	10,000	-	16,400	-	3,608	20,008
6	338,000	-	84,600	12,700	435,800	165,865	22,790	624,455

Note: Coalescer w/filter will be supplied by Japanese vendor

REFERENCE

60,000 BPSD CRUDE UNIT (INCL. VACUUM UNIT)

	(Unit : US\$)
1. Professional services (Home, local & field office M.H)(162,000 Hrs)	5,680,000
2. Direct & indirect material	39,800,000
3. Direct labor & construction	10,460,000
4. Transportation (15,000 F/T)	2,000,000
5. Home and field office exp.	3,220,000
6. Contingency and OH & PR (15%)	9,180,000
Total	70,340,000

Note : SCOPE OF WORKS AND FACILITIES

- (1) The crude unit includes all the process facilities and services inside Battery Limit of:
 - a) Design and engineering
 - b) Civil works
 - c) Equipment and materials
 - d) Transportation
 - e) Erection and installation
 - f) Precommissioning and commissioning work
- (2) Soil improvement and piling work is excluded.
- (3) Import duty and VAT is excluded
- (4) Utility services facilities and storages are not included in the estimate.
As for the electric supply, up to secondary electric substation is included
- (5) No building is included, other than control room and electric substation.

ANNEX 2

Reference Documents for Cost Estimation of Modernization of Power Plant

ANNEX 2 REFERENCE DOCUMENTS FOR COST ESTIMATION OF MODERNIZATION OF POWER PLANT

A.2.1 Retrofitting Item List for Power Plant in PPSA

1. Replacement of Economizer

A staggered, not a checker arrangement is used in the economizers of boilers burning heavy fuel oil. The present economizer will be replaced with a checker arrangement economizer.

2. Replacement of Jungstrom

The present Jungstrom will be replaced with the most up-to-date model in order to reduce combustion air leak to flue gas at Jungstrom by under 5%.

3. Replacement of Burners

All burners will be replaced with low NO_x burners from conventional type.

4. Replacement of Burner Guns for Bias Combustion

Burners are mounted on three stages. The burner guns on upper stage will be replaced with guns having 80% capacity. The burner guns on lower stage will be replaced with guns having 120% capacity. (These capacity data shall be used for cost estimation only.)

5. Installation of Flue Gas Recirculation System

This is to reduce NO_x formation in combustion chamber. Refer to Figure.1 as a proposed flow scheme.

6. Installation of Soot Blower

Soot blowers will be installed up and down stream of each superheater and at the heat transfer element of Jungstrom for boilers. As for the type of soot blowers, refracting type for high temperature zones and fixed position rotating type for Jungstrom. Refer to Figure 2 as positions of soot blowers to be installed.

7. Installation of New Steam Air Heaters at Down Stream of Existing Ones

Existing steam air heater is possible to heat combustion air from ambient temperature to 50°C by using 7.5 ata steam. New steam air heaters using 18 ata steam will be installed at downstream of existing steam air heaters.

1. Replacement of Economizer

Item	Main works	Note
1.1 Piping work around economizer	(1) To remove & repair of side wall (2) To rearrange of economizer tubes tube size 19 mm ϕ tube material carbon steel (3) Painting & insulation	Refer to Fig.6.2-1 in the Final Draft Report. Refer to Fig.1

2. Replacement of Jungstrom

Item	Main works	Note
2.1 Jungstrom	(1) Manufacturing & installation of Jungstroms (2) Piping (3) Electrical & Instruments (4) Painting & insulation (5) Civil	Refer to Fig.6.2-1 in the Final Draft Report.
2.2 Piping work around Jungstrom	(1) To connect flue gas duct and combustion air duct (2) To connect utility piping	

3. Replacement of Burner

Item	Main works	Note
3.1 Replacement to low NOx Burners	(1) Manufacturing of burner assemblies including air register dampers (2) To rearrange of burner assemblies (3) Refractory lining	Refer to Fig.5.2-1 in the Final Draft Report.

4. Replacement of burner guns for bias combustion

Item	Main works	Note
4.1 Burner tips	(1) Manufacturing of burner tips number 12 material (2) To mount burner tips on existing burner guns	Refer to Fig.5.2-2 in the Draft Final Report.

5. Installation of Flue Gas Recirculation System

↔ Cancel

Item	Main works	Note
5.1 Blower	<p>(1) Manufacturing and installation of flue gas circulation blowers</p> <p>quantity 2</p> <p>flue gas temperature 400 °C</p> <p>flue gas pressure mmHg</p> <p>head mmHg</p> <p>flow rate m³/min</p> <p>(2) Electrical & Instrument</p> <p>(3) Painting & Insulation</p> <p>(4) Civil</p>	<p>This system is canceled by the following reasons.</p> <p>① There is no access for this system in the boiler site.</p> <p>② The other measures is available for reduction of NO_x.</p>
5.2 Installation of ducts	<p>(1) Flue gas duct</p> <p>(2) Mixing device</p> <p>(3) Insulation</p>	<p>Refer to Fig.2.(delete)</p>

6. Installation of Soot Blowers

Item	Main works	Note
6.1 Soot Blowers	<p>(1) Manufacturing and installation of soot blowers</p> <p>quantity 7</p> <p>refracting type 5</p> <p>fixed position- rotating type 2</p> <p>(2) Rearrangement of water screen tube wall for refracting type soot blowers</p> <p>(3) Electric & Instruments</p> <p>(4) Painting & Insulation</p>	<p>Refer to Fig.6.2-1 in the Interim report.</p> <p>Refer to Fig.3.</p>

7. Installation of new steam air heater

Item	Main works	Note
7.1 steam air heater	<p>(1) Manufacturing and installation of steam air heater</p> <p>(2) Piping</p> <p>a. To connect inlet line of 18 ata steam.</p> <p>b. To connect recovery line of condensate.</p>	Refer to Fig.4.

8. Adoption of countercurrent regeneration

Item	Main works	Note
8.1 Piping work	<p>(1) Manufacturing of internals of ion-exchange resin towers (5 sets)</p> <p>a. Inlet nozzle with flange for water stream</p> <p>b. Distributor for water stream</p> <p>c. Outlet nozzle with flange for regenerant stream</p> <p>d. Collector for regenerant stream</p> <p>e. Inlet nozzle with flange for regenerant stream</p> <p>(2) To mount an outlet nozzle on each ion-exchange tower for collector of regenerant stream</p> <p>a. Nozzle size 207 mm-ID</p> <p>b. Hard rubber lining and curing</p> <p>(3) Assembling of internals in ion-exchange resin tower</p> <p>(4) To connect water line & regenerant line</p> <p>line size mmϕ</p> <p>line length m</p> <p>material</p>	Refer to Fig.5.

9. Adoption of series regenerant feed

Item	Main works	Note
9.1 Piping work	<p>(1) To connect regenerant line from collector outlet of downstream cation (anion) tower to distributor inlet of upstream cation(anion) tower.</p> <p>line size mmϕ line length m material SUS 316</p>	

10. Elimination of dead ends of pipe

Item	Main works	Note
10.1 Piping work	<p>(1) To eliminate common piping.</p> <p>a. Between adsorber and cation tower b. Between cation tower and anion tower c. Between anion tower and decarbonator d. cation tower and anion tower e. anion tower and silica polisher</p> <p>(2) To connect new piping for each train instead of common piping.</p> <p>line size mmϕ line length m material Hard rubber lining</p>	

Figure 1 DETAIL DRAWING OF ECONOMIZER IN NO.2 BOILER OF PFSA

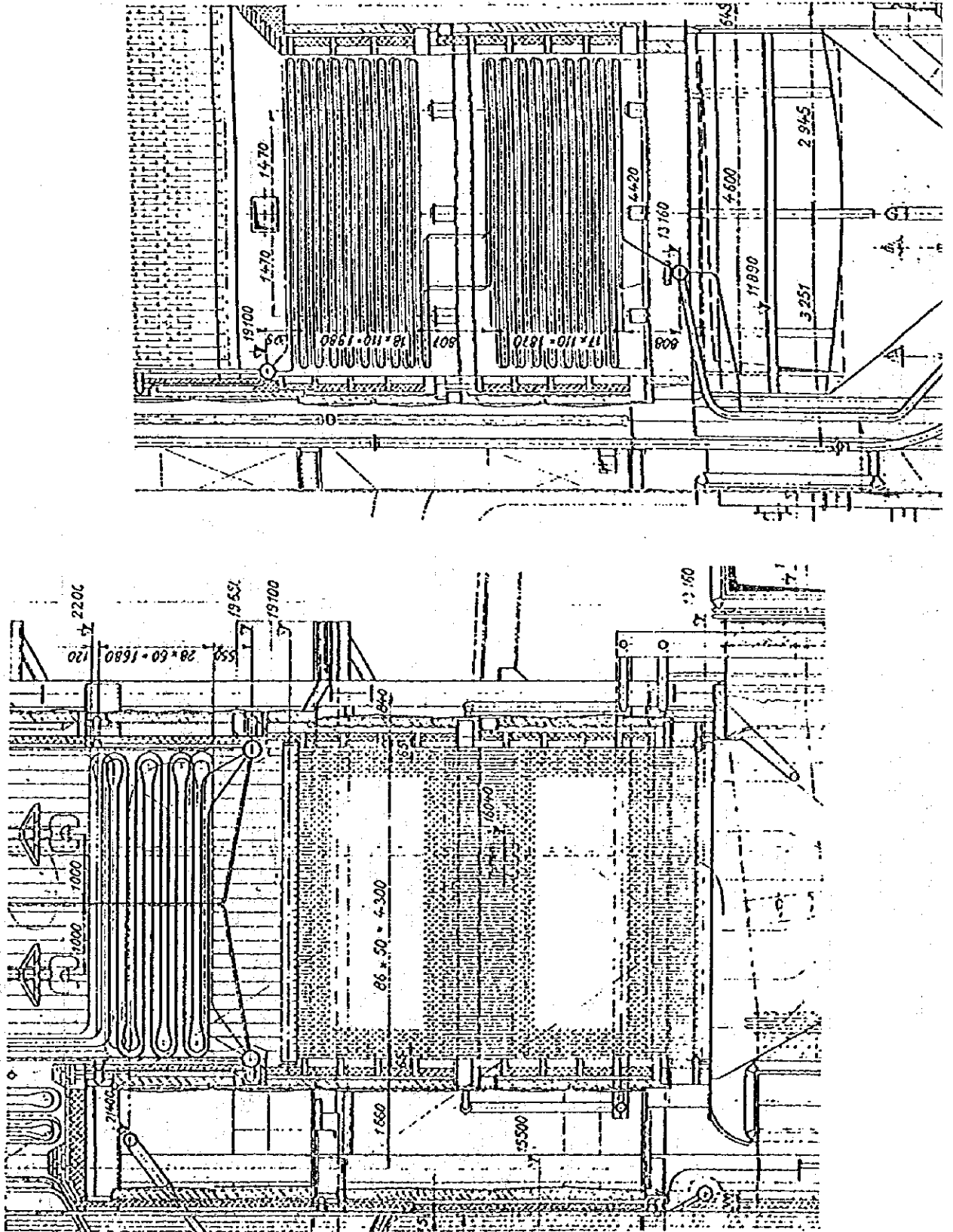


Figure 2 SIMPLIFIED FLOW SCHEME OF FLUE GAS RECIRCULATION SYSTEM
FLOW DIAGRAM OF BOILER

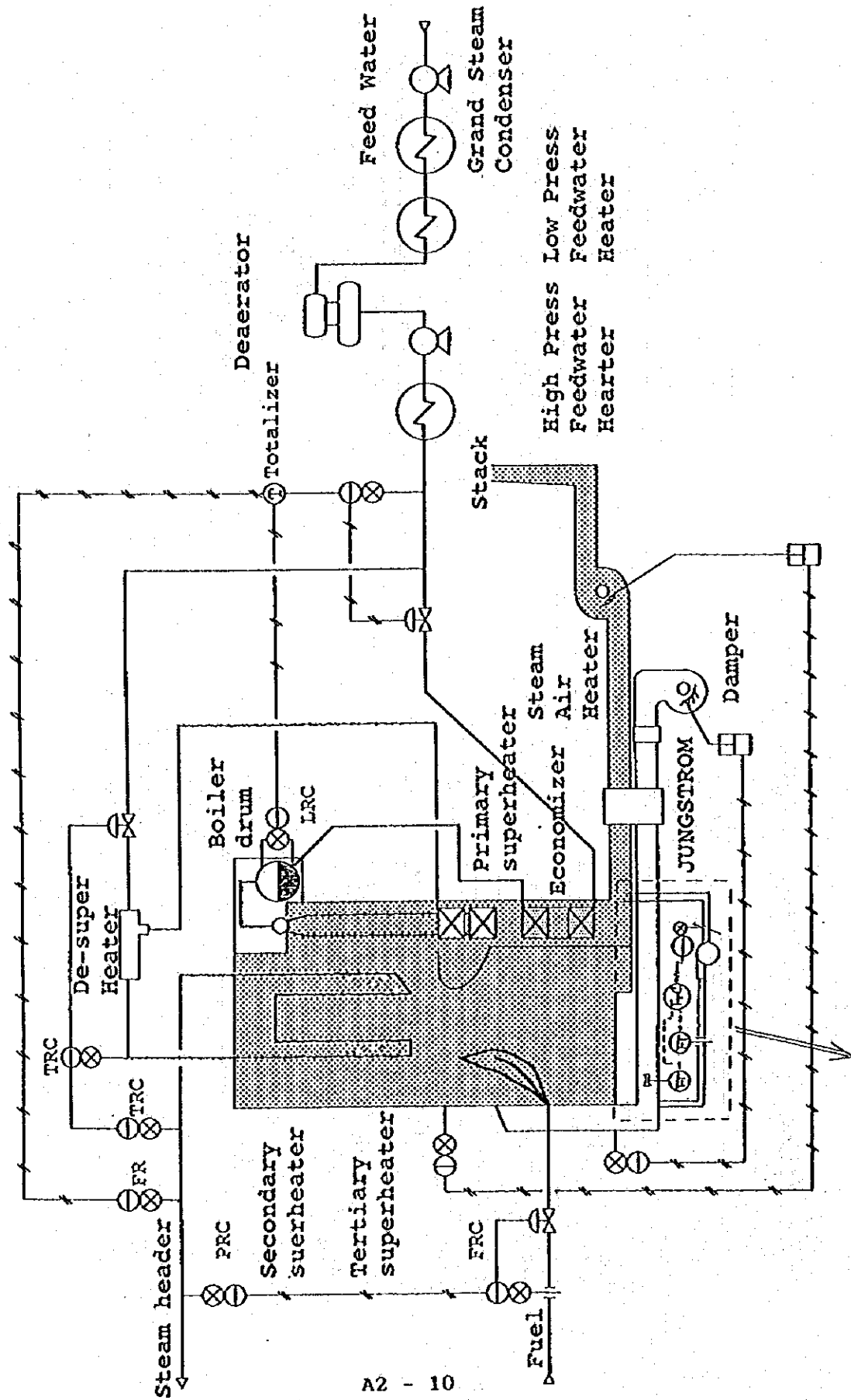


Figure 3 GENERAL DRAWING OF REARRANGEMENT OF WATER SCREEN TUBES

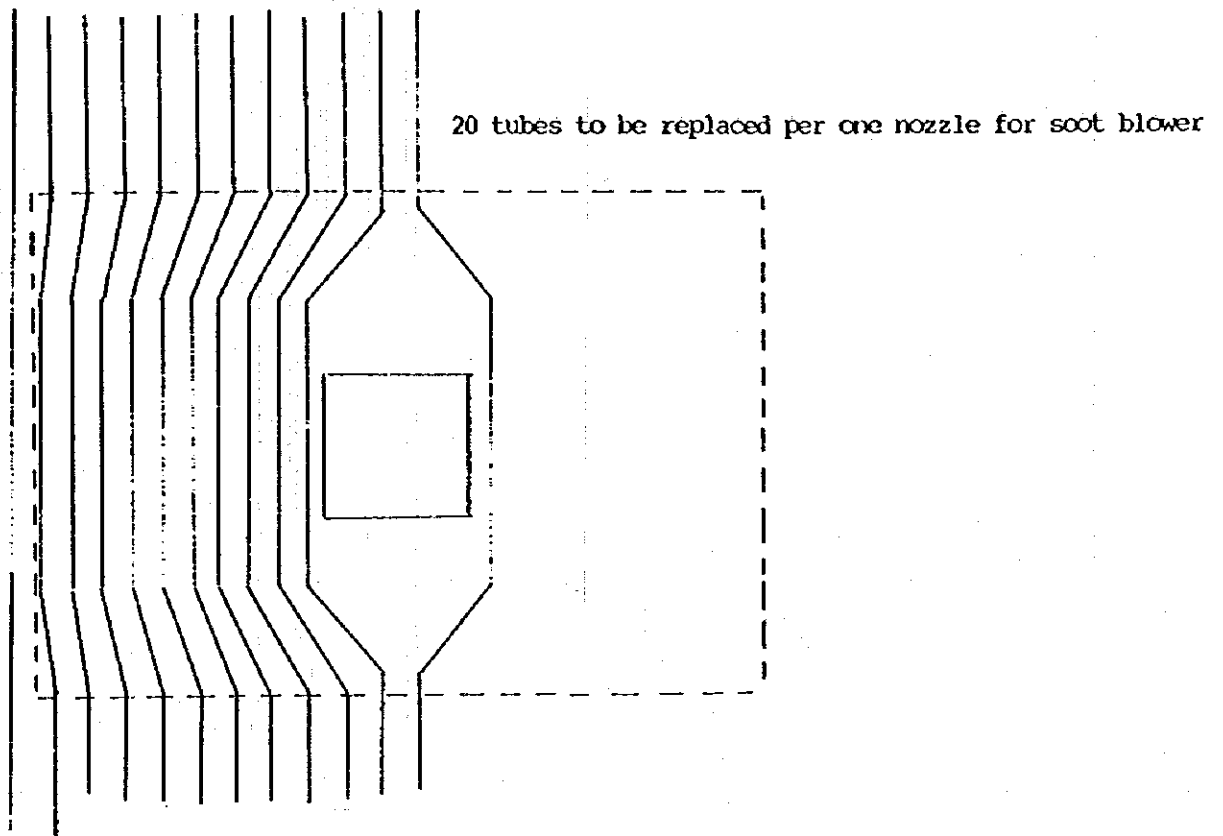
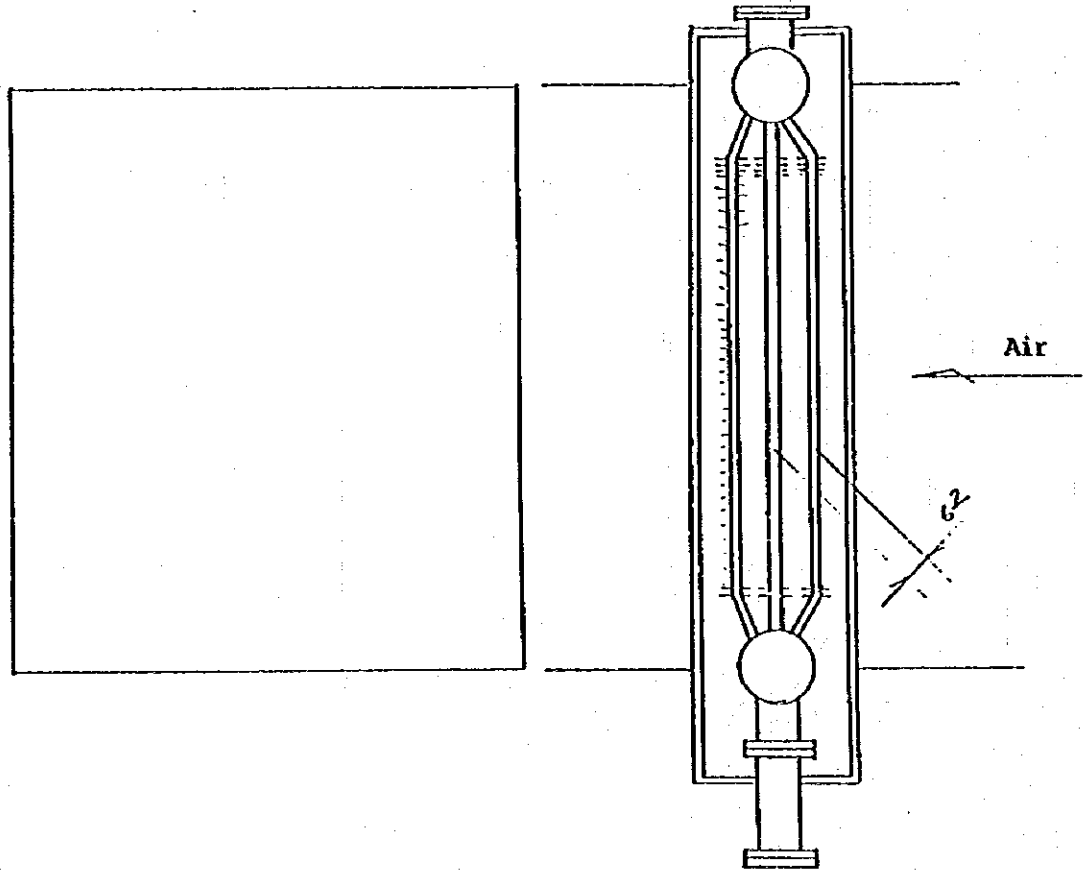
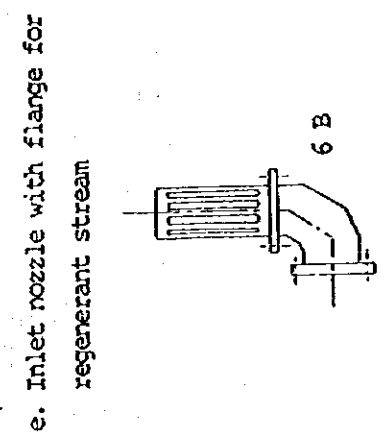
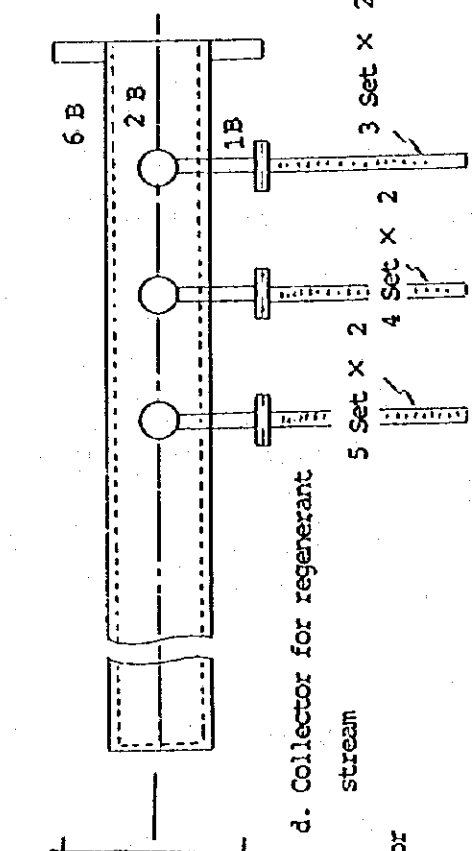
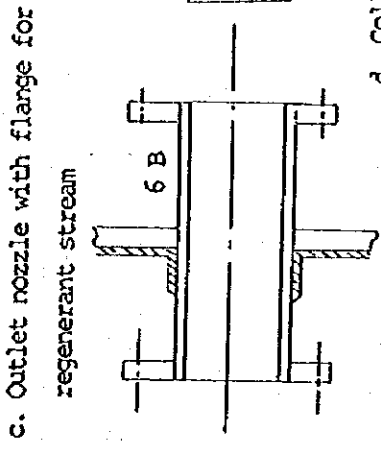
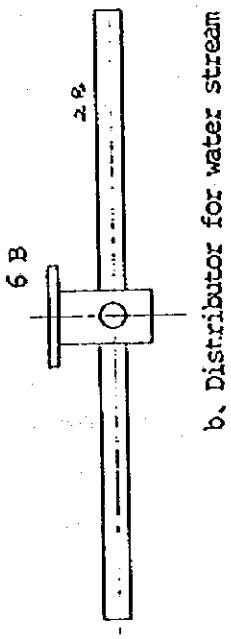
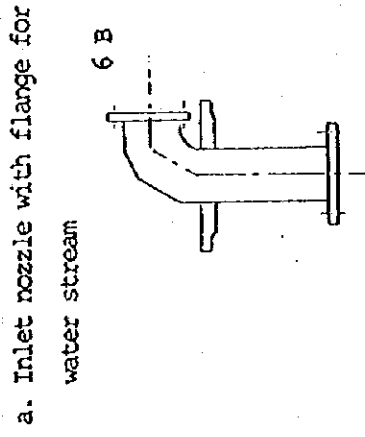
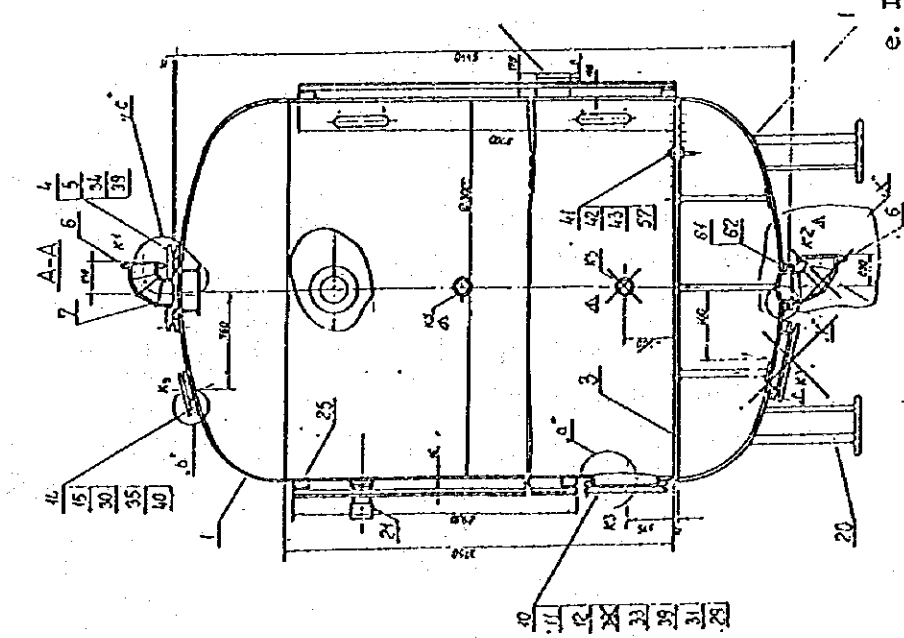


Figure 4 GENERAL DRAWING OF A NEW STEAM-AIR HEATER



tube 15.9 mm ϕ \times 2 mm thickness

Figure 5 GENERAL DRAWING OF INTERNALS IN ION-EXCHANGE RESIN TOWER



Total 33 set x 2

A.2.2 Installation of New Boiler Plant in PPSA

1. Design Basis

(1) Quality of Steam

The main specification of generated steam are as follows.

Design Capacity	320 t/h
Design Steam Temperature	540°C
Design Steam Pressure	139 ata

(2) Quality of Fuel

The main specification of fuel are as follows.

Fuel	Vacuum Residue Oil
Pour Point	45°C
Specific Gravity	
Heating Value	40,000 KJ/kg
Composition	
Sulfur	3 wt %
Nitrogen	wt %
Residual Carbon (Conradson Carbon)	wt %
Vanadium	220 wt ppm
Nickel	wt ppm
Viscosity	cSt @ 100°C

(3) Performance

- Boiler Efficiency more than 94%
- Continuous Operation more than 1 year
- Emission of Air Pollutants
 - NOx 160 vol ppm @ 4% O₂ and Rated Load
 - Dust less than 150 mg/Nm³

2. Special Requirements

(1) Draft Control System

Forced draft system will be required to use as draft control system in combustion chamber.

(2) Combustion Control System

Air-fuel ratio control system will be required to use as combustion control system.

(3) Instrumentation

It is possible to control the Unit in advanced and effective ways by using DCS(Distributed Control System).

(4) Analyzer

It is possible to use the following analyzers.

- Flue Gas System
 - * O₂ analyzer in combustion flue gas
 - * NO_x monitor in combustion flue gas
- Boiler Water Control System
 - * pH monitor of boiler water
 - * Electric conductivity monitor of boiler water
 - * Dissolved oxygen monitor in boiler water
 - * Residual hydrazine monitor in boiler water

(5) Battery Limits

The battery limits of construction works are as follows.

- It is included to tie-in with the existing flue gas duct.
- It is included to tie-in with the existing boiler feed water line.
- It is included to tie-in with the existing steam heater.
- It is included to tie-in with the existing cooling water heater.
- It is included to tie-in with the existing fuel oil heater.

- it is included to tie-in with the existing control panels of electric power units.
- It is included to mount keyboards and displays, but construction of control house is out of scope.

(6) spare Parts

Spare parts for two years operation will be required with vendor's recommendation.

A.2.3 Installation of New Boiler Feed Water Treatment Facilities in PPSA

1. Design Basis

(1) Capacity

The main specification of raw water are as follows.

Design Capacity 300 m³/h (Product Base)

(2) Quality of Raw water

pH	9.8 - 10.6
SS(mg/l)	26.9
COD(mg-O ₂ /l)	49.5
Ca(mg-CaCO ₃ /l)	206.3
Mg(mg-CaCO ₃ /l)	49.5
Na(mg-CaCO ₃ /l)	202.5
K (mg-CaCO ₃ /l)	8.3
<hr/>	
Total Cation	466.6
HCO ₃ (mg-CaCO ₃ /l)	3.0
SO ₄ (mg-CaCO ₃ /l)	114.8
Cl (mg-CaCO ₃ /l)	244.5
NO ₃ (mg-CaCO ₃ /l)	1.5
CO ₃ (mg-CaCO ₃ /l)	87.0
SiO ₂ (mg-CaCO ₃ /l)	15.8
<hr/>	
Total Anion	466.6

(3) Quality of Raw water

pH	8.5 - 9.8	
Hardness(mg-CaCO ₃ /l)	0	
Total Iron(mg-Fe/l)	0.20	under
Total Copper(mg-Cu/l)	0.01	under
Soln O ₂ (mg-O/l)	0.007	under
N ₂ H ₄ (mg-N ₂ H ₄ /l)	0.01	under
Electric Conductivity (μ S/cm)	0.3	under

[Ion-Exchange Method Case]

(1) Requirement for chemical consumption

HCl consumption	<0.40 kg/m ³	-pure water
NaOH consumption	<0.50 kg/m ³	-pure water

(2) Requirement for raw water consumption

raw water consumption	<1.10 m ³ /m ³	-pure water
-----------------------	--------------------------------------	-------------

(3) Analyzer

It is possible to use the following analyzers.

- pH meter
 - * pH control of HCl injection line
 - * pH monitor of back wash water recovery line
- Silica meter
 - * Silica monitor of Anion tower outlet
 - * Silica monitor of M/B tower outlet
- Electric conductivity meter
 - * Electric conductivity monitor of M/B tower outlet
 - * Electric conductivity monitor of filter outlet
 - * Electric conductivity monitor of Anion tower outlet

(4) Buttery limits

- It is included to tie-in with the existing raw water line
- It is included to tie-in with the existing pure water line
- It is included to install pressurized flotation separator and sludge removal system.

- It is included to mount keyboards and displays, but construction of control house is out of scope.

(5) Spare Parts

Spare parts for two years operation will be required with vendor's recommendation.

[R.O. Method case]

(1) Requirement for chemical consumption to be provided recommendation.

(2) Requirement for raw water consumption to be provided recommendation.

(3) Analyzer to be provided recommendation.

(4) Buttery limits

- It is included to tie-in with the existing raw water line
- It is included to tie-in with the existing pure water line
- It is included to install pressurized flotation separator and sludge removal system.
- It is included to mount keyboards and displays, but construction of control house is out of scope.

(5) Spare Parts

Spare parts for two years operation will be required with vendor's recommendation.

A.2.4 Installation of New Condensing Turbine Generator System

1. Design Basis

(1) Capacity

Generated Electricity 65,000 kw

(2) Driving Steam

The specification of driving steam are as follows.

Design Steam Temperature 540°C
Design Steam Pressure 139 ata

(3) Extraction Steam

The specification of extraction steam are as follows.

Design temperature of 45 ata steam °C
Design pressure of 45 at steam ata
Design temperature of 18 ata steam °C
Design pressure of 18 ata steam ata
Design temperature of 1.2 ata steam °C
Design pressure of 1.2 ata steam ata

(4) Specification of electricity generated

Voltage 10.5 kV
Frequency 50 + 0.5 Hz
Power Factor

(5) Performance

- Generating Efficiency more than %
- Continuous Operation more than 1 Year

2. Special Requirements

(1) Reducing valve of Steam Header

Reducing valve from 45 ata steam header to 35 ata steam header will be installed.

(2) Instrumentation

It will be required to use control system in advanced and effective ways by using DCS (Distributed Control System). And it is possible to meet the demand for process control by applying the software of DCS.

(3) Battery Limits

The battery limits of construction works are as follows.

- It is included to tie-in with the existing cooling water heater.
- It is included to tie-in with the existing bus duct.
- It is included to tie-in with the existing steam heater.
- It is included to mount keyboards and displays, but construction of control house is out of scope.
- It is included to tie-in with the bus bar and construction of substation for new condensing turbine.

(4) Spare Parts

Spare parts for two years operation will be required with vender's recommendation.

PLANT COST ESTIMATION

(Unit: US\$)

	Equipment & Material		Field work	EPS-MH and expenses	Sub total	Import duty	VAT	Total
	Foreign	Local						
B-1	Modification of 3 boilers							
1) Economizer	-	528,000	432,000	67,200	1,027,200	-	225,984	1,253,184
2) Jungstrom	1,800,000	42,360	9,000	55,540	1,906,900	882,000	23,518	2,812,418
3) Low NOx burner	-	1,710,000	1,350	51,340	1,762,690	-	387,792	2,150,482
4) Installation of duct	-	75,600	81,400	15,750	172,750	-	38,005	210,755
5) Soot blower	173,100	-	10,800	5,520	189,420	84,819	3,590	277,829
6) Heat recovery from continuous blow water	-	incl. Field work	56,560	8,480	65,040	-	14,309	79,349
7) Steam recovery from dealrator vent	-	-	56,000	8,400	64,400	-	14,168	78,568
Total of B-1	1,973,100	2,355,960	647,110	212,230	5,188,400	966,819	707,366	6,862,585
Alternative plan	-	180,000	incl. in material cost	-	180,000	-	39,600	219,600
- Exchange of burner tip	-	-	-	-	-	-	-	-
B-2	3 sets of 320 T/M Boiler							
- Boiler w/auxiliaries	-	25,440,000	6,360,000	2,403,000	34,203,000	-	7,524,660	41,727,660
- Demolishing of existing boilers	-	-	318,000	-	318,000	-	69,960	387,960
Total of B-2	-	25,440,000	6,678,000	2,403,000	34,521,000	-	7,594,620	42,115,620

Note : Jungstrom and soot blower will be supplied European vendor.

		Equipment & Material		Field work	EPS-MH and expenses	Sub total	Import duty	VAT	Total
		Foreign	Local						
G-1	Condensing Turbine Generator								
	1) Turbine generator W/auxiliaries	8,000,000	5,500,000	4,044,000	1,454,000	18,998,000	3,920,000	2,419,560	25,337,560
	2) Cooling water line	-	-	2,228,680	222,868	2,451,548	-	539,341	2,990,889
	Total of G-1	8,000,000	5,500,000	6,272,680	1,676,868	21,449,548	3,920,000	958,901	26,328,449

Note : 1. Condensing turbine will be supplied by foreign vendor and auxiliary equipment and materials will be supplied by local vendor.
2. Control system by DCS is included.

	W-1	Equipment & Material		Field work	EPS-MH and expenses	Sub total	Import duty	VAT	Total
		Foreign	Local						
	Boller feed water facilities	-	-	66,000	32,500	98,500	-	21,670	120,170
	1) Modification of regeneration vessels	-	-	240,200	36,030	276,230	-	60,771	337,001
	2) Modification of piping	66,000	28,800	42,560	20,600	157,960	32,340	20,231	210,531
	3) Feed water recovery system	66,000	28,800	348,760	89,130	532,690	32,340	102,672	667,702
	Total of W-1								

Note: "Funda-filter" will be supplied by Japanese vendor.

REFERENCE

DEMINERALIZED WATER FACILITIES

		(Unit : U.S.\$)
	<u>Ion exchange</u>	<u>R.O. System</u>
<u>Description</u>		
1. Equipment & material (Foreign supply)	7,070,000	5,225,000
2. Equipment & material (Local supply)	5,215,000	2,457,000
3. Engineering work	780,000	600,000
4. Field work	5,550,000	3,852,000
5. Supervising	375,000	375,000
6. Transportation	250,000	175,000
7. Civil work	400,000	400,000
8. Misc. expenses	1,669,000	1,255,000
Total	21,309,000	14,339,000

Cost breakdown of R.O. system of Demineralized water facilities

(1) Equipment and material (Foreign supply)

Coagulator	1 set	700,000
Gravity filtrator	3 sets	450,000
Safety filter	3 sets	90,000
R.O. Unit	1 set	2,300,000
Field instrument	1 set	35,000
Control panel w/control instrument	1 lot	1,300,000
Ion exchange resin	1 lot	350,000
Total	U.S.\$	5,225,000

(2) Equipment and material (Local supply)

Towers and vessels	1 lot	637,000
Piping material	1 lot	1,120,000
Rotating equipment	1 lot	350,000
Electrical and instrument material	1 lot	350,000
Total	U.S.\$	2,457,000

ANNEX 3

Reverse Osmosis Membrane Method

ANNEX 3 REVERSE OSMOSIS MEMBRANE METHOD

3.1 Application as Boiler Feed Water Treating Unit

Flush method has come into wide use as the technology of fresh waterization from sea water at first. In recent years, the osmosis membrane method has spread widely. At the time of 1980, the application examples has reached 930 units in the world. And also there are many examples of reverse osmosis membrane method as boiler feed water treating units in Japan. Table A.3.1 are listed Japanese examples of big plants more than 1,000 m³/h.

Table 3.1 THE EXAMPLES OF REVERSE OSMOSIS METHOD AS BOILER FEED WATER TREATMENT UNIT IN JAPAN

Year	Plant owner	Location	Plant Capacity	Unit No. of Capacity	Unit
1971	Sumitomo Metal Industry Co.	Kashima	13,600 m ³ /h	1,360 m ³ /h	10
1973	Kashima Co-operative Generation Co.	Kashima	9,600 m ³ /h	2,400 m ³ /h	4
1974	Kashima Petro. Chemical Co.	Kashima	5,300 m ³ /h	2,650 m ³ /h	2
1974	Kanegafuchi Chemical Co.	Kashima	1,000 m ³ /h	1,000 m ³ /h	1
1975	Hokuriku Electric Co.	Fukui	3,500 m ³ /h	1,750 m ³ /h	2
1980	Kansai Electric Co.	Himeji	1,200 m ³ /h	1,200 m ³ /h	1

Source: T. Ishihara, Zosui Gizyutsu, 15 (2), 39-44 (1989)

3.2 Outline of Reverse Osmosis Membrane Method

The demineralizer using reverse osmosis membrane has the following three sections, pre-treating section, demineralizing section and post-treating section. Figure A.3.1 shows the typical flow scheme of reverse osmosis membrane method. It is required the same of pre-treating and post-treating section in the ion exchange resin method.

Science, in the case of river water treating, raw water contains much organic materials and micro-organisms. In the case of river water treating, raw water contains much organic materials, osmosis membranes are fouled and plugged by these pollutants most of the time.

Especially, in the existence of much suspended materials such as waterweeds and water micro-organisms, it is difficult to remove these suspended materials by means of precipitator. Therefore, flotation methods are adopted in many cases.

Demineralized water is treated according to the purpose of use. In the purpose of supplying boiler feed water, silica polisher using ion exchange resins are adopted in post-treating section.

3.3 Comparison with Reverse Osmosis Membrane Method and Ion Exchange Resin Method

In this item, merits and demerits of reverse osmosis membrane method are summarized as follows in order to compare with ion exchange resin method.

[Merits of Reverse Osmosis Membrane Method]

- (1) No dairy regeneration operation using strong acid and strong alkali

In reverse osmosis membranes are washed several times per year and only silica polisher requires regeneration operation.

- (2) Easy operation and easy maintenance
- (3) Continuous operation
- (4) Small amount of waste water during regeneration operation
- (5) Possibility of removal of organic materials, micro-organisms and colloidal silica.
- (6) High cost performance

Higher mineral concentration in raw water, more profitable than ion exchange resin method.

[De-merits of Reverse Osmosis Membrane Method]

- (1) Much raw water consumption

The brine which is enriched 4 times of mineral concentration in raw water is generated after production of demineralized water.

- (2) Membrane washing

Membrane washing is required approximately every 4 months. Therefore, some waste water containing citric acid and ammonia is discharge.

(3) Expensive membrane

(4) Much electric consumption

Here, construction cost based on raw water quality shown in Table 6.1-2 and capacity of 300 m³/h are listed in the following Table A.3-2 for reference.

Table 3-2 CONSTRUCTION COSTS OF BOILER FEED WATER TREATING UNITS

Boiler feed water treating unit	Estimated construction cost
Iron exchange resin method	21 million US\$
Reverse osmosis membrane method	14 million US\$

Chemical consumptions per 1 m³ of demineralized water are shown in Table A.3-3.

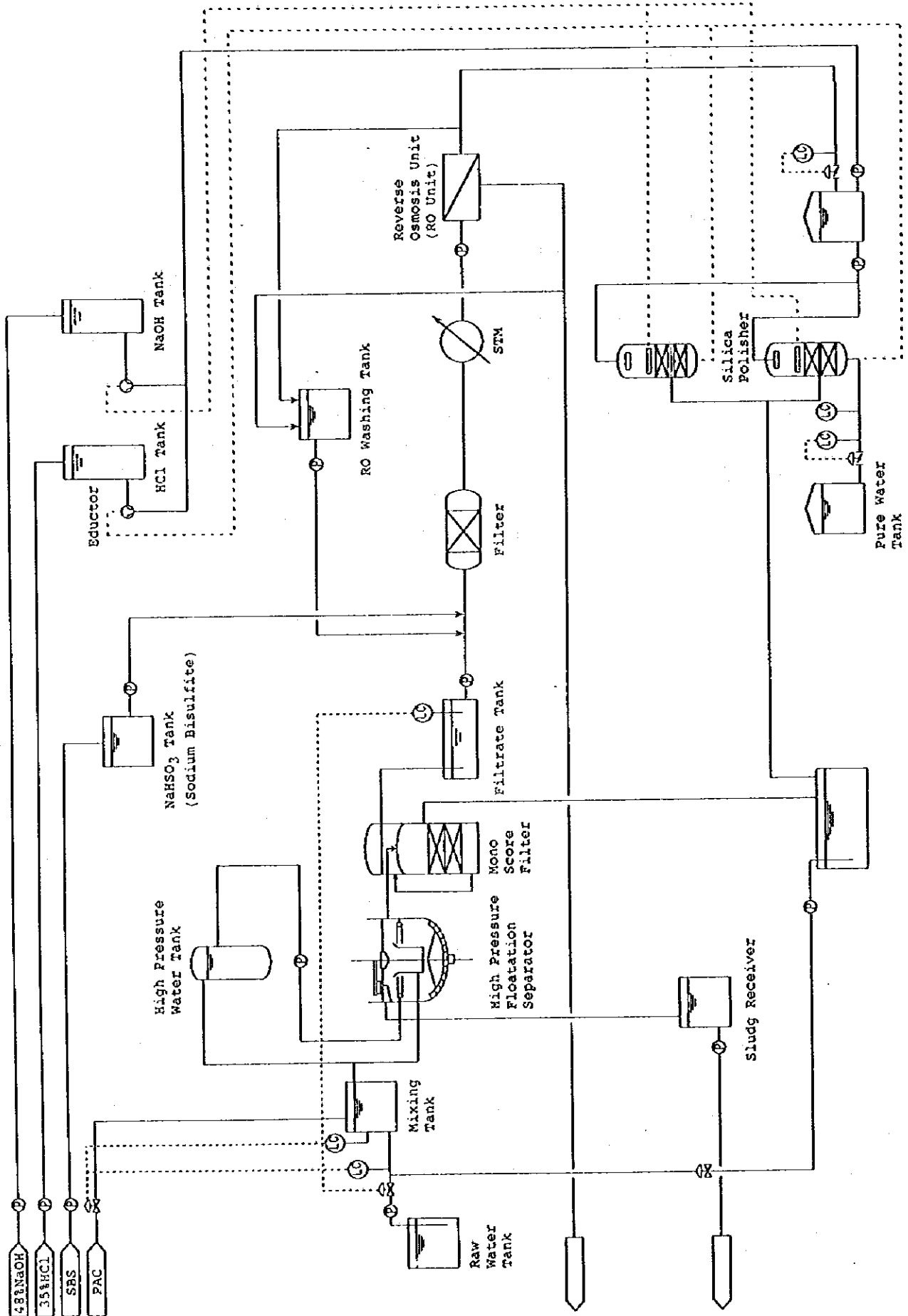
Table 3-3 CHEMICAL CONSUMPTION OF BOILER FEED WATER TREATING UNITS

Chemicals	Reverse Osmosis Method	Ion Exchange Method
HCl @ 100%	0.06 kg/m ³ -P.W.	0.40 kg/M ³ -P.W.
NaOH @ 100%	0.10 kg/m ³ -P.W.	0.50 kg/M ³ -P.W.
Na ₂ SO ₃ @ 100%	0.30 kg/m ³ -P.W.	
Citric Acid	0.80 kg/m1000 m ³ -P.W.	
NH ₃	0.80 kg/m1000 m ³ -P.W.	

Consequently, it is presumed that reverse osmosis membrane method is superior to ion exchange resin method from the economical viewpoint in the case of newly installation of boiler feed water treating unit, if the quality of raw water is severe such as P.P.S.A..

However, when the new plant is actually constructed, actual sample of raw water is taken for test in order to certificate whether the pre-treating system constructed is suitable and reliable.

Figure A.3-1 SIMPLIFIED FLOW DIAGRAM OF REVERSE OSMOSIS DEMINERALIZER



ANNEX 4

PRICE OF CRUDE OIL AND PRODUCTS

Annex 4 PRICE OF CRUDE OIL AND PRODUCTS

4.1 Price of Crude Oil and Products

The feed to No.1 Crude Distillation Unit has been agreed to be Ural Crude Oil to be supplied from Russia through a pipeline. As the basis for the establishment of the price of the crude oil, PPSA presented the prices of different crudes used by PPSA in the year 1993 as indicated in table A4-1.

Table A4-1 PURCHASE PRICE OF CRUDE BY PPSA

	Ural	Brent Blenol	Flotte	Wytch Farm
FOB Price (US\$/ton)	15.79	17.89	16.92	17.31
Transportation (US\$/bbl)	Nil	0.70	0.70	0.70
CIF Price (US\$/bbl)	15.79	18.59	17.62	18.01
Border Tax (6% FOB)	0.947	1.073	1.015	1.039
Fee to Foreign Trade Agency (Percentage on FOB)	0.205 (1.30)	0.617 (3.45)	0.584 (3.45)	0.597 (3.45)
Local Transportation (US\$/bbl) (Zl/ton)	0.206 (24.81)	0.201 (24.81)	0.202 (24.81)	0.197 (24.81)
Total Supplied Price (US\$/ton)	17.15	20.48	19.42	19.84
Conversion Rate (bbl/ton)	7.314	7.511	7.447	7.629

Source : PPSA

In principle, the prices will be used for the Study with the consideration and modification as mentioned below;

- (1) It is reported that the price of Ural crude oil supplied from Russia to Poland does not necessarily reflect the international free market price since the trade relation between two countries has a long history, and it is

possible that the price is still skewed. It is required to study if the price of Ural crude oil presented is at the level of international price.

- (2) Other crude oils which are purchased in the international market can be considered to represent the international prices. Among these oils, price of Brent Blend (North Sea) will be used as the basis of determining the Ural crude oil price since the price trend of this crude oil is most available in international publication.
- (3) The prices of different crude oils, of course, depend on various characteristics and properties of oils. However, major determinant factors will be API gravity and content of sulfur of the oil. Brent Blend has API 38° and 0.4 wt% sulfur content. On the other hand, the Ural has API 32.3° and sulfur content of 1.39 wt%. This implied that price of Ural crude oil is far below the that of Brent Blend.
- (4) Where prices are commonly reported in the international market, crude oils similar in terms of API gravity and sulfur content to Ural are USSR Export Blend and Dubai Fete. Former has API 32.5° and sulfur content of 1.38 wt% and the later has API 32° and higher sulfur content of 1.8 wt% sulfur. Since USSR Export Blend is very close to Ural in the API gravity and sulfur content, it is assumed that the price of Ural will be equal to the price of USSR Export Blend. Further, to confirm the relevancy of the price relations by API gravity and sulfur content, it will be studied how is the relation of the prices between USSR Export Blend and Dubai Fete. Since the two have similar API gravity, but, Dubai Fete has higher sulfur content, the price of USSR Export Blend shall be higher than Dubai Fete in the international market.
- (5) The price relation among Brent Blend, USSR Export Blend and Dubai Fete for the last 13 months are enumerated in Table A4-2.

Table A4-2 OIL & GAS JOURNAL WORLD CRUDE PRICES (\$/bb1)

	United Kingdom-Brent 38*	U.S.S.R.-Export blend 32*	Saudi light 34*	Dubai Fateh 32*
92/12/18	18.40	17.15	16.75	16.10
92/12/25	18.30	16.60	17.20	16.55
93/01/01	17.90	16.30	16.80	16.15
93/01/08	17.35	15.50	16.35	15.65
93/01/15	17.20	15.35	16.35	14.95
93/01/22	17.05	15.25	15.47	14.80
93/01/29	18.55	16.85	16.20	15.40
93/02/05	18.55	16.85	16.70	15.95
93/02/12	18.45	16.65	17.00	16.05
93/02/19	18.20	16.20	16.55	15.60
93/02/26	18.90	17.30	17.10	16.30
93/03/05	19.25	17.50	17.55	16.80
93/03/12	18.75	17.00	17.55	16.55
93/03/19	18.70	16.90	17.30	16.15
93/03/26	18.50	16.65	17.05	15.90
93/04/02	18.85	16.95	17.50	16.30
93/04/09	18.60	16.75	17.60	16.55
93/04/16	18.50	16.70	17.50	16.45
93/04/23	18.55	16.80	17.10	16.10
93/04/30	18.80	16.95	17.10	16.10
93/05/07	19.00	17.25	17.35	16.30
93/05/14	18.40	16.50	17.15	16.25
93/05/21	18.05	16.15	16.43	15.55
93/05/28	18.35	16.40	16.55	15.50
93/06/04	18.20	16.25	16.85	16.05
93/06/11	17.55	15.70	16.80	16.10
93/06/18	17.20	15.40	16.23	15.45
93/06/25	17.25	15.50	16.03	15.25
93/07/02	16.85	15.10	15.93	15.15
93/07/09	16.50	14.70	15.30	14.45
93/07/16	16.50	14.60	15.13	14.20
93/07/23	16.80	15.15	14.95	13.95
93/07/30	16.70	15.50	15.10	14.10
93/08/06	16.30	14.65	15.03	14.30
93/08/13	16.90	15.25	14.95	14.30
93/08/20	16.65	14.90	15.60	15.15
93/08/27	17.15	15.25	15.05	14.70
93/09/03	16.30	14.60	15.33	14.65
93/09/10	15.40	13.65	14.70	14.15
93/09/17	15.55	13.80	14.38	13.85
93/09/24	16.00	14.20	14.68	14.15
93/10/01	17.15	15.65	15.05	14.55
93/10/08	16.90	15.50	15.50	14.90
93/10/15	16.70	15.35	15.78	15.10
93/10/22	16.50	15.15	15.53	14.85
93/10/29	15.55	14.30	15.10	14.40
93/11/05	15.70	14.45	14.90	14.30
93/11/12	14.95	13.75	14.65	14.05
93/11/19	15.30	14.05	14.68	13.95
93/11/26	14.30	13.00	14.30	13.50
93/12/03	13.90	12.90	12.95	12.45
93/12/10	13.80	13.00	12.50	12.15
93/12/17	13.70	12.75	12.55	12.30
93/12/24	13.50	12.55	12.55	12.20
93/12/31	13.15	12.35	12.40	12.00
94/01/07	14.65	14.00	13.20	12.70
94/01/14	14.10	13.60	13.48	13.05
94/01/21	14.25	13.85	13.75	13.35
94/01/28	14.70	14.25	14.10	13.60
94/02/04	14.90	14.40	14.13	13.60
94/02/11	13.80	13.20	13.63	13.10
94/02/18	13.05	12.45	13.03	12.45
94/02/25	13.30	12.70	13.05	12.45
94/03/04	13.45	12.90	13.43	12.75
94/03/11	13.75	13.30	12.73	12.00
94/03/18	14.05	13.65	12.98	12.25
94/03/25	14.65	14.30	13.00	12.10
94/04/01	13.10	12.60	12.58	11.75
94/04/08	14.35	13.75	13.63	13.05
94/04/15	15.15	14.55	14.03	13.60
94/04/22	16.00	15.45	14.48	14.10
94/04/29	15.40	14.50	14.93	14.55
94/05/06	16.40	15.50	14.85	14.30
94/5/20	16.70	15.90	15.33	14.75
94/05/27	16.20	15.50	15.55	15.05
94/06/03	16.05	15.45	16.10	15.40

(6) By using regression analysis of the relations, following formulas can be obtained

$$P_{\text{USSR}} = 2.734 + 0.751 \times P_{\text{BRENT}}$$

(0.324) (0.023)

No. of Freedom = 62

$$R^2 = 0.947$$

$$P_{\text{DUBAI}} = 2.382 + 0.742 \times P_{\text{BRENT}}$$

(0.403) (0.028)

No. of Freedom = 62

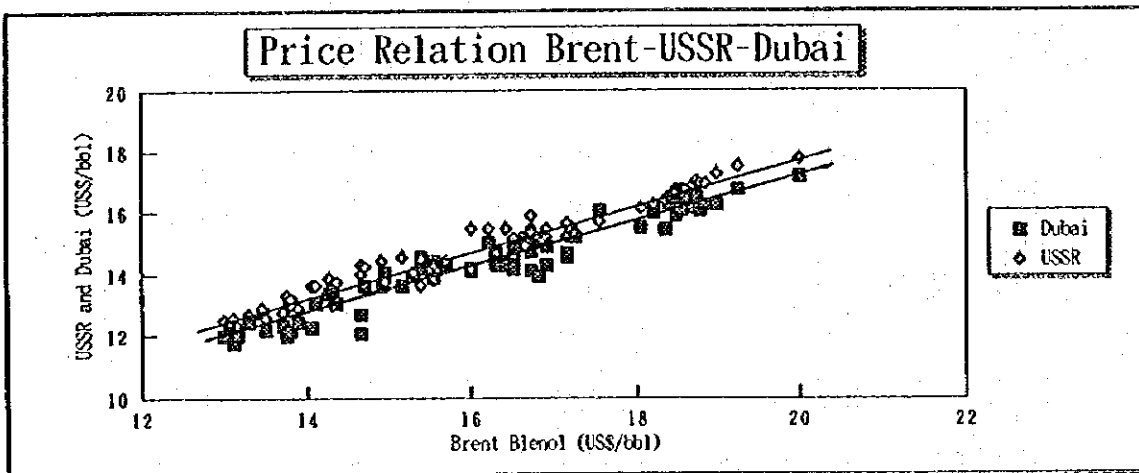
$$R^2 = 0.919$$

Where,

P_{USSR} = Price of USSR Export Blend, P_{DUBAI} = Price of Dubai Fete and P_{BRENT} = Price of Brent Blenol

Those relations are depicted in Figure A4-1, where actual price data and estimated prices of are depicted.

Figure A4-1



(6) From the above equation, the best estimated price of USSR Export Blend when the price of Brent Blenol is at US\$ 17.89/bbl has been calculated as 16.17 \$/bbl on FOB (or border) price and this will be used as the FOB price of Ural Crude Oil. Further, it has been confirmed in the

figure that the price of Dubai Fete is lower than the price of USSR Export Blend since its has higher sulfur content although both have similar API gravity.

Estimate of the price of Ural Crude to be used for the study is obtained as follows using the same formula as Table A4-2.

Price of Ural	FOB	16.17 \$/bbl
	Border Tax	0.970 \$/bbl
	Fee to FTA	0.210 \$/bbl
	Local Transport	0.206 \$/bbl
	<hr/>	
	Total Cost	17.56 \$/bbl
		128.4 \$/ton

4.2 Price of the Products

- (1) As for the price of the Ural crude oil, it has been estimated to be 16.17 \$/bbl based on the price of 17.89 US\$/bbl of Brent Blend Crude Oil Price. Now, based on the price of Brent Crude Oil, the prices of the intermediate products to be applicable for the study will be estimated. Due to the fact that the refinery industry will be fully liberalized from the year 1998, international prices prevailing in the European market will be used as the base for the study.
- (2) In the international market, the prices of fractions of the refinery will be more or less linked to the price of crude oil in general. Such are naphtha, kerosene and gas oil. On the other hand, prices of fuel oils which are rather residue of the refining mainly depend on the seasonal demand of fuel oils. Therefore, the prices of the intermediates (naphtha, kerosene and gas oil) are calculated by using the analyzing the price data in relation with the price of crude (this time the price of Brent Blend) in the Rotterdam market.

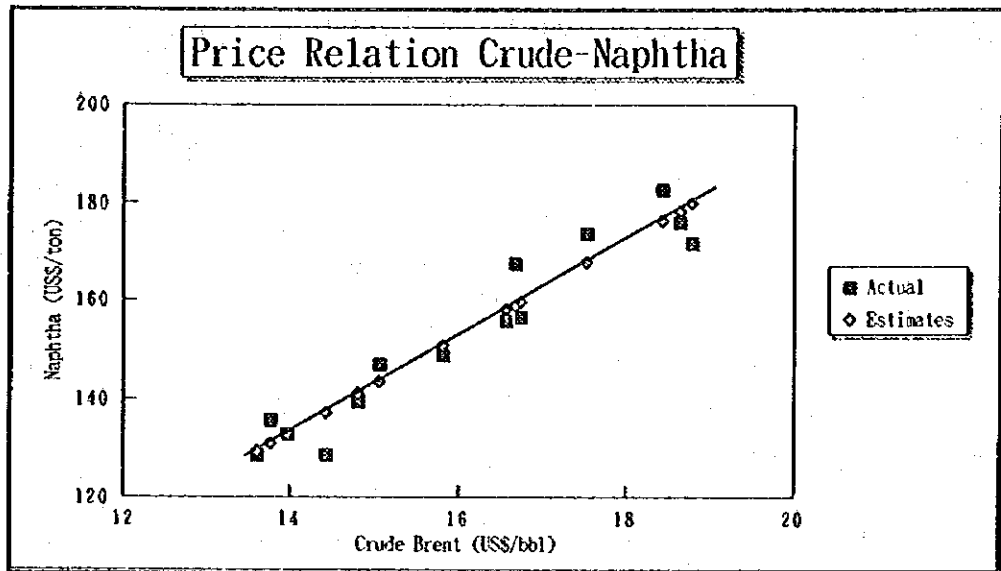
(3) Prices of the international market in the European countries are well represented by the spot prices of the products at Rotteldom, where transaction of petroleum is active. The prices of the naphtha, kerosine, gas oil and fuel oils in relative to the price of Brent crude oil are shown Table A4-3 attached herein.

Table A4-3

	Crude Brent \$/bbl	Naphtha \$/ton	Kerosin \$/ton	Gas Oil \$/ton	Fuel 1% \$/ton	Fuel 3% \$/ton
	12					
93/12	13.61	128.68	167.37	145.13	68.00	52.81
94/02	13.76	135.70	160.39	141.57	86.52	77.33
94/03	13.98	132.63	156.16	139.99	82.22	76.56
94/01	14.43	128.42	164.03	143.40	76.68	59.78
94/04	14.80	139.45	163.02	148.74	78.32	73.11
93/11	15.06	146.75	185.94	163.74	73.84	60.87
93/09	15.81	148.84	178.91	161.80	81.32	60.29
93/10	16.56	155.97	192.30	170.00	83.66	62.31
93/07	16.67	167.50	174.25	161.75	91.00	56.00
93/08	16.75	156.45	176.59	159.82	84.07	59.87
93/06	17.55	173.90	179.78	166.15	88.35	58.88
93/05	18.45	182.60	189.32	175.54	96.15	70.51
93/04	18.66	175.95	191.44	178.88	101.50	77.99
93/03	18.80	171.84	193.20	175.90	95.42	76.56
	19					

(4) The relation between the price of naphtha and the Brent Blenol is analyzed by the regression and the result is depicted in the Figure A4-2.

Figure A4-2



The regression formula is;

$$\text{Price of Naphtha} = -3.744 + 9.77 \times \text{Price of Brent}$$

(5.431) (0.817)

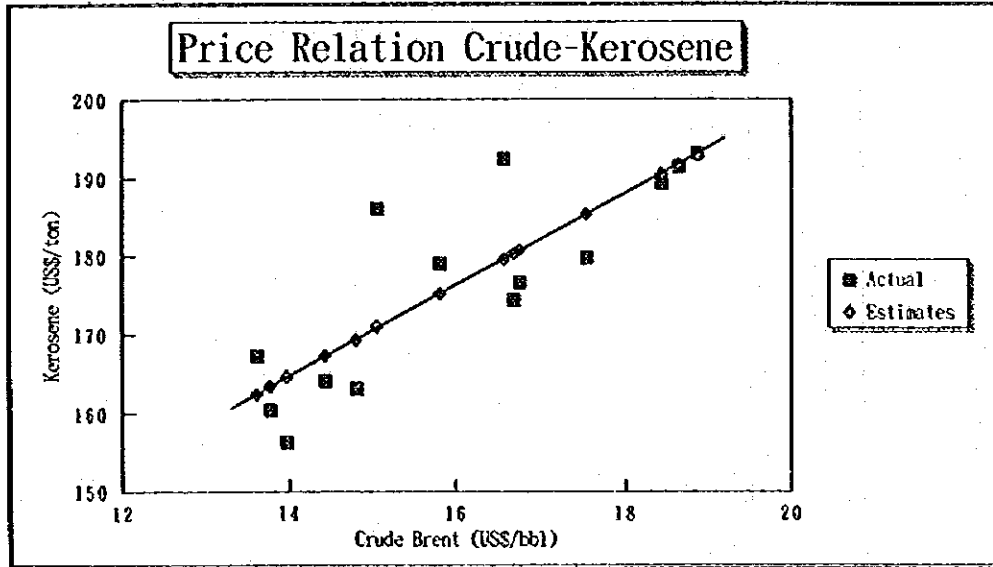
No. of Freedom = 12

$$R^2 = 0.923$$

The price of naphtha at the price of Brent 18.89 is estimated to be 171 US\$/ton.

- (5) The relation between the price of kerosene and the Brent Blenol is analyzed by the regression and the result is depicted in the Figure A4-3.

Figure A4-3



The regression formula is ;

$$\text{Price of Kerosene} = 83.74 + 5.78 \times \text{Price of Brent}$$

(7.312) (1.1)

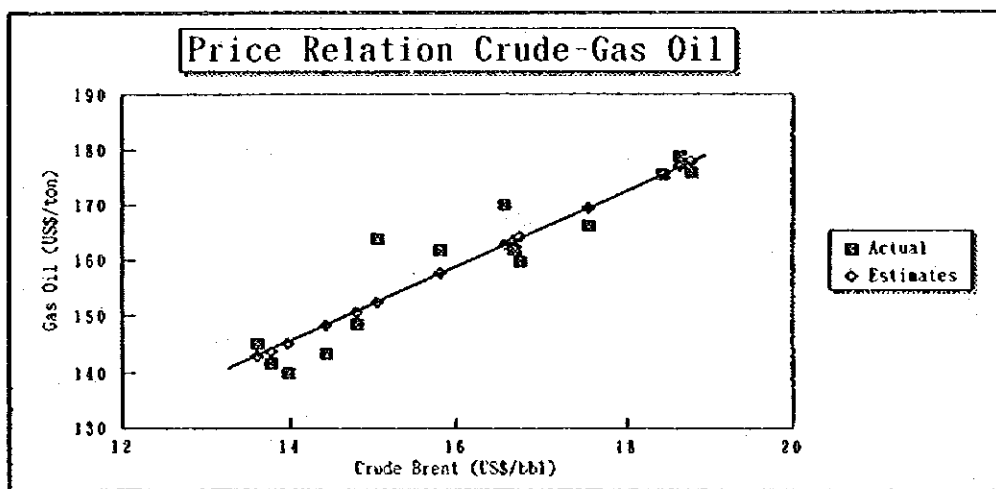
No. of Freedom = 12

$$R^2 = 0.697$$

The price of kerosene at the price of Brent 17.89 is estimated to be 187 US\$/ton.

- (6) The relation between the price of gas oil and the Brent Blenol is analyzed by the regression and the result is depicted in the Figure A4-4.

Figure A4-4



The regression formula is ;

$$\text{Price of Gas Oil} = 50.19 + 6.80 \times \text{Price of Brent}$$

(5.024) (0.752)

No. of Freedom = 12

$$R^2 = 0.872$$

The price of kerosene at the price of Brent 17.89 is estimated to be 171 US\$/ton.

ANNEX 5

FINANCIAL ANALYSIS SHEETS

ANNEX 5 FINANCIAL ANALYSIS SHEETS

5.1 No.1 CDU (Operational Rate : 80%)

(1) "WITH" Case	A5.1 - 1 ... A5.1 - 17
(2) "WITHOUT" Case	A5.1 - 18 ... A5.1 - 34
(3) "Incremental" Case	A5.1 - 35 ... A5.1 - 46

5.2 Power Plant ("Incremental" Case)	A5.2 - 1 ... A5.2 - 12
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*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION AND SALES PLAN
 - WITH CASE (2.439.360 T/Y, C.V.:80%) - (US\$, 1.000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
RATED CAPACITY (FUEL GAS)	0.	0.	5544.	5544.	5544.	5544.	5544.	5544.	5544.	5544.
CAPACITY UTILIZATION (FUEL GAS)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.	0.	4435.	4435.	4435.	4435.	4435.	4435.	4435.	4435.
INCREASE IN INVENTORY (FUEL GAS)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	0.	0.	4435.	4435.	4435.	4435.	4435.	4435.	4435.	4435.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050
SALES REVENUE (FUEL GAS)	0.	0.	466.	466.	466.	466.	466.	466.	466.	466.
RATED CAPACITY (LPG)	0.	0.	34056.	34056.	34056.	34056.	34056.	34056.	34056.	34056.
CAPACITY UTILIZATION (LPG)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.	0.	27245.	27245.	27245.	27245.	27245.	27245.	27245.	27245.
INCREASE IN INVENTORY (LPG)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	0.	0.	27245.	27245.	27245.	27245.	27245.	27245.	27245.	27245.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE (LPG)	0.	0.	3269.	3269.	3269.	3269.	3269.	3269.	3269.	3269.
RATED CAPACITY (L/H NAPHTHA)	0.	0.	435600.	435600.	435600.	435600.	435600.	435600.	435600.	435600.
CAPACITY UTIL'N (L/H NAPHTHA)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.	0.	348480.	348480.	348480.	348480.	348480.	348480.	348480.	348480.
INC. IN INVENTORY (L/H NAPHTHA)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	0.	0.	348480.	348480.	348480.	348480.	348480.	348480.	348480.	348480.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
SALES REVENUE (L/H NAPHTHA)	0.	0.	59242.	59242.	59242.	59242.	59242.	59242.	59242.	59242.
RATED CAPACITY (KEROSENE)	0.	0.	742104.	742104.	742104.	742104.	742104.	742104.	742104.	742104.
CAPACITY UTILIZATION (KEROSENE)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.	0.	593683.	593683.	593683.	593683.	593683.	593683.	593683.	593683.
INC. IN INVENTORY (KEROSENE)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	0.	0.	593683.	593683.	593683.	593683.	593683.	593683.	593683.	593683.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900
SALES REVENUE (KEROSENE)	0.	0.	106863.	106863.	106863.	106863.	106863.	106863.	106863.	106863.
RATED CAPACITY (GAS OIL)	0.	0.	664488.	664488.	664488.	664488.	664488.	664488.	664488.	664488.
CAPACITY UTILIZATION (GAS OIL)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.	0.	531590.	531590.	531590.	531590.	531590.	531590.	531590.	531590.
INCREASE IN INVENTORY (GAS OIL)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	0.	0.	531590.	531590.	531590.	531590.	531590.	531590.	531590.	531590.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
SALES REVENUE (GAS OIL)	0.	0.	85054.	85054.	85054.	85054.	85054.	85054.	85054.	85054.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION AND SALES PLAN
 - WITH CASE (2,439,360 T/Y, C.U.:60X) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
RATED CAPACITY (F.O. (LS))			79200.	79200.	79200.	79200.	79200.	79200.	79200.	79200.
CAPACITY UTIL'N (F.O. (LS))		0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)		0.0	0.0	63360.	63360.	63360.	63360.	63360.	63360.	63360.
INC. IN INVENTORY (F.O. (LS))		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)		0.0	0.0	63360.	63360.	63360.	63360.	63360.	63360.	63360.
UNIT SALES PRICE (US\$/T)		0.0	0.0	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O. (LS))		0.0	0.0	5386.	5386.	5386.	5386.	5386.	5386.	5386.
RATED CAPACITY (F.O. (HS))			478368.	478368.	478368.	478368.	478368.	478368.	478368.	478368.
CAPACITY UTILIZATION (F.O. (HS))		0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)		0.0	0.0	382694.	382694.	382694.	382694.	382694.	382694.	382694.
INC. IN INVENTORY (F.O. (HS))		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)		0.0	0.0	382694.	382694.	382694.	382694.	382694.	382694.	382694.
UNIT SALES PRICE (US\$/T)		0.0	0.0	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O. (HS))		0.0	0.0	24875.	24875.	24875.	24875.	24875.	24875.	24875.
TOTAL SALES REVENUE		0.0	0.0	285155.	285155.	285155.	285155.	285155.	285155.	285165.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION AND SALES PLAN
 - WITH CASE (2,439,360 T/Y, C.U.:80%) - (US\$. 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
RATED CAPACITY (FUEL GAS)	5544.	5544.	5544.	5544.	5544.	5544.	5544.
CAPACITY UTILIZATION (FUEL GAS)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	4435.	4435.	4435.	4435.	4435.	4435.	4435.
INCREASE IN INVENTORY (FUEL GAS)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	4435.	4435.	4435.	4435.	4435.	4435.	4435.
UNIT SALES PRICE (US\$/T)	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050
SALES REVENUE (FUEL GAS)	466.	466.	466.	466.	466.	466.	466.
RATED CAPACITY (LPG)	34056.	34056.	34056.	34056.	34056.	34056.	34056.
CAPACITY UTILIZATION (LPG)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	27245.	27245.	27245.	27245.	27245.	27245.	27245.
INCREASE IN INVENTORY (LPG)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	27245.	27245.	27245.	27245.	27245.	27245.	27245.
UNIT SALES PRICE (US\$/T)	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE (LPG)	3269.	3269.	3269.	3269.	3269.	3269.	3269.
RATED CAPACITY (L/H NAPHTHA)	435600.	435600.	435600.	435600.	435600.	435600.	435600.
CAPACITY UTILIZATION (L/H NAPHTHA)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	348480.	348480.	348480.	348480.	348480.	348480.	348480.
INC. IN INVENTORY (L/H NAPHTHA)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	348480.	348480.	348480.	348480.	348480.	348480.	348480.
UNIT SALES PRICE (US\$/T)	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
SALES REVENUE (L/H NAPHTHA)	59242.	59242.	59242.	59242.	59242.	59242.	59242.
RATED CAPACITY (KEROSENE)	1.	1.	1.	1.	1.	1.	1.
CAPACITY UTILIZATION (KEROSENE)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	1.	1.	1.	1.	1.	1.	1.
INC. IN INVENTORY (KEROSENE)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	1.	1.	1.	1.	1.	1.	1.
UNIT SALES PRICE (US\$/T)	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900
SALES REVENUE (KEROSENE)	0.	0.	0.	0.	0.	0.	0.
RATED CAPACITY (GAS OIL)	742104.	742104.	742104.	742104.	742104.	742104.	742104.
CAPACITY UTILIZATION (GAS OIL)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	593683.	593683.	593683.	593683.	593683.	593683.	593683.
INCREASE IN INVENTORY (GAS OIL)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	593683.	593683.	593683.	593683.	593683.	593683.	593683.
UNIT SALES PRICE (US\$/T)	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
SALES REVENUE (GAS OIL)	106863.	106863.	106863.	106863.	106863.	106863.	106863.
RATED CAPACITY (V.G.O.)	664488.	664488.	664488.	664488.	664488.	664488.	664488.
CAPACITY UTILIZATION (V.G.O.)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	531590.	531590.	531590.	531590.	531590.	531590.	531590.
INCREASE IN INVENTORY (V.G.O.)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	531590.	531590.	531590.	531590.	531590.	531590.	531590.
UNIT SALES PRICE (US\$/T)	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
SALES REVENUE (V.G.O.)	85054.	85054.	85054.	85054.	85054.	85054.	85054.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 - WITH CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
RATED CAPACITY (F.O.(LS))	79200.	79200.	79200.	79200.	79200.	79200.	79200.
CAPACITY UTIL'N (F.O.(LS))	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	63360.	63360.	63360.	63360.	63360.	63360.	63360.
INC. IN INVENTORY (F.O.(LS))	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	63360.	63360.	63360.	63360.	63360.	63360.	63360.
UNIT SALES PRICE (US\$/T)	0.0850	0.0850	0.0850	0.0850	0.0850	0.0850	0.0850
SALES REVENUE (F.O.(LS))	5386.	5386.	5386.	5386.	5386.	5386.	5386.
RATED CAPACITY (F.O.(HS))	478368.	478368.	478368.	478368.	478368.	478368.	478368.
CAPACITY UTILIZATION (F.O.(HS))	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	382694.	382694.	382694.	382694.	382694.	382694.	382694.
INC. IN INVENTORY (F.O.(HS))	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	382694.	382694.	382694.	382694.	382694.	382694.	382694.
UNIT SALES PRICE (US\$/T)	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O.(HS))	24875.	24875.	24875.	24875.	24875.	24875.	24875.
TOTAL SALES REVENUE	285155.	285155.	285155.	285155.	285155.	285155.	285155.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:50%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PRODUCTION (VOLUME)	0.	0.	4435.	4435.	4435.	4435.	4435.	4435.	4435.	4435.
RAW MATERIAL COST	0.	0.	253694.	253694.	253694.	253694.	253694.	253694.	253694.	253694.
CRUDE OIL	0.	0.	253694.	253694.	253694.	253694.	253694.	253694.	253694.	253694.
UTILITIES COST	0.	0.	5481.	5481.	5481.	5481.	5481.	5481.	5481.	5481.
ELECTRICITY	0.	0.	804.	804.	804.	804.	804.	804.	804.	804.
STEAM	0.	0.	1926.	1926.	1926.	1926.	1926.	1926.	1926.	1926.
COOLING WATER	0.	0.	532.	532.	532.	532.	532.	532.	532.	532.
FUEL GAS	0.	0.	1025.	1025.	1025.	1025.	1025.	1025.	1025.	1025.
FUEL OIL	0.	0.	1194.	1194.	1194.	1194.	1194.	1194.	1194.	1194.
VARIABLE COST	0.	0.	259175.	259175.	259175.	259175.	259175.	259175.	259175.	259175.
EMPLOYMENT COST	0.	0.	175.	175.	175.	175.	175.	175.	175.	175.
EMPLOYMENT COST	0.	0.	175.	175.	175.	175.	175.	175.	175.	175.
MAINTENANCE COST	0.	0.	517.	517.	517.	517.	517.	517.	517.	517.
MAINTENANCE COST	0.	0.	517.	517.	517.	517.	517.	517.	517.	517.
OVERHEAD COST	0.	0.	245.	245.	245.	245.	245.	245.	245.	245.
OVERHEAD COST	0.	0.	245.	245.	245.	245.	245.	245.	245.	245.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
LAND LEASE COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
DIRECT FIXED COST	0.	0.	260111.	260111.	260111.	260111.	260111.	260111.	260111.	260111.
DIRECT FIXED COST	0.	0.	260111.	260111.	260111.	260111.	260111.	260111.	260111.	260111.
CASH FACTORY COST	0.	0.	260111.	260111.	260111.	260111.	260111.	260111.	260111.	260111.
CASH FACTORY COST	0.	0.	260111.	260111.	260111.	260111.	260111.	260111.	260111.	260111.
DEPRECIABLE ASSETS	0.	0.	576.	576.	576.	576.	576.	576.	576.	576.
DEPRECIABLE ASSETS	0.	0.	576.	576.	576.	576.	576.	576.	576.	576.
PRE-OPERATIONAL EXPENSES	0.	0.	86.	86.	86.	86.	86.	86.	86.	86.
PRE-OPERATIONAL EXPENSES	0.	0.	86.	86.	86.	86.	86.	86.	86.	86.
INTEREST DRG CONST.	0.	0.	109.	109.	109.	109.	109.	109.	109.	109.
INTEREST DRG CONST.	0.	0.	109.	109.	109.	109.	109.	109.	109.	109.
DEPRECIATION AND AMORTIZATION	0.	0.	772.	772.	772.	772.	772.	772.	772.	772.
DEPRECIATION AND AMORTIZATION	0.	0.	772.	772.	772.	772.	772.	772.	772.	772.
TOTAL FACTORY COST	0.0	0.0	260883.	260883.	260883.	260883.	260883.	260883.	260883.	260883.
TOTAL FACTORY COST	0.0	0.0	260883.	260883.	260883.	260883.	260883.	260883.	260883.	260883.
UNIT FACTORY COST	0.0	0.0	0.1337	0.1337	0.1337	0.1337	0.1337	0.1336	0.1336	0.1336
UNIT FACTORY COST	0.0	0.0	0.1337	0.1337	0.1337	0.1337	0.1336	0.1336	0.1336	0.1336
SALES EXPENSES	0.	0.	1711.	1711.	1711.	1711.	1711.	1711.	1711.	1711.
SALES EXPENSES	0.	0.	1711.	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADMI. EXPENSES	0.	0.	1711.	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADMI. EXPENSES	0.	0.	1711.	1711.	1711.	1711.	1711.	1711.	1711.	1711.
OTHER EXPENSES	0.	0.	285.	285.	285.	285.	285.	285.	285.	285.
OTHER EXPENSES	0.	0.	285.	285.	285.	285.	285.	285.	285.	285.
GENERAL & ADMI. EXPENSES	0.	0.	1996.	1996.	1996.	1996.	1996.	1996.	1996.	1996.
GENERAL & ADMI. EXPENSES	0.	0.	1996.	1996.	1996.	1996.	1996.	1996.	1996.	1996.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2397.	1917.	1438.	479.	479.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2397.	1917.	1438.	479.	479.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2397.	1917.	1438.	479.	479.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2397.	1917.	1438.	479.	479.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	0.0	0.0	266987.	266508.	266028.	265548.	265070.	264394.	264394.	264394.
TOTAL PRODUCTION COST	0.0	0.0	266987.	266508.	266028.	265548.	265070.	264394.	264394.	264394.
UNIT PRODUCTION COST	0.0	0.0	0.1366	0.1366	0.1363	0.1361	0.1358	0.1355	0.1355	0.1355
UNIT PRODUCTION COST	0.0	0.0	0.1366	0.1366	0.1363	0.1361	0.1358	0.1355	0.1355	0.1355

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:80X) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
PRODUCTION (VOLUME)	4435.	4435.	4435.	4435.	4435.	4435.	4435.
RAW MATERIAL COST	253694.	253694.	253694.	253694.	253694.	253694.	253694.
CRUDE OIL	253694.	253694.	253694.	253694.	253694.	253694.	253694.
UTILITIES COST	5481.	5481.	5481.	5481.	5481.	5481.	5481.
ELECTRICITY	804.	804.	804.	804.	804.	804.	804.
STEAM	1926.	1926.	1926.	1926.	1926.	1926.	1926.
COOLING WATER	532.	532.	532.	532.	532.	532.	532.
FUEL GAS	1025.	1025.	1025.	1025.	1025.	1025.	1025.
FUEL OIL	1194.	1194.	1194.	1194.	1194.	1194.	1194.
VARIABLE COST	259175.	259175.	259175.	259175.	259175.	259175.	259175.
EMPLOYMENT COST	175.	175.	175.	175.	175.	175.	175.
EMPLOYMENT COST	175.	175.	175.	175.	175.	175.	175.
MAINTENANCE COST	517.	517.	517.	517.	517.	517.	517.
MAINTENANCE COST	517.	517.	517.	517.	517.	517.	517.
OVERHEAD COST	245.	245.	245.	245.	245.	245.	245.
OVERHEAD COST	245.	245.	245.	245.	245.	245.	245.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	936.	936.	936.	936.	936.	936.	936.
LAND LEASE COST	936.	936.	936.	936.	936.	936.	936.
DIRECT FIXED COST	936.	936.	936.	936.	936.	936.	936.
DIRECT FIXED COST	936.	936.	936.	936.	936.	936.	936.
CASH FACTORY COST	260111.	260111.	260111.	260111.	260111.	260111.	260111.
CASH FACTORY COST	260111.	260111.	260111.	260111.	260111.	260111.	260111.
DEPRECIABLE ASSETS	576.	576.	576.	576.	576.	576.	576.
DEPRECIABLE ASSETS	576.	576.	576.	576.	576.	576.	576.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG CONST.	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG CONST.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	576.	576.	576.	576.	576.	576.	576.
DEPRECIATION AND AMORTIZATION	576.	576.	576.	576.	576.	576.	576.
TOTAL FACTORY COST	260687.	260687.	260687.	260687.	260687.	260687.	260687.
TOTAL FACTORY COST	260687.	260687.	260687.	260687.	260687.	260687.	260687.
UNIT FACTORY COST	0.1336	0.1336	0.1336	0.1336	0.1336	0.1336	0.1336
UNIT FACTORY COST	0.1336	0.1336	0.1336	0.1336	0.1336	0.1336	0.1336
SALES EXPENSES	1711.	1711.	1711.	1711.	1711.	1711.	1711.
SALES EXPENSES	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADM. EXPENSES	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADM. EXPENSES	1711.	1711.	1711.	1711.	1711.	1711.	1711.
OTHER EXPENSES	285.	285.	285.	285.	285.	285.	285.
OTHER EXPENSES	285.	285.	285.	285.	285.	285.	285.
GENERAL & ADM. EXPENSES	1996.	1996.	1996.	1996.	1996.	1996.	1996.
GENERAL & ADM. EXPENSES	1996.	1996.	1996.	1996.	1996.	1996.	1996.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	264394.	264394.	264394.	264394.	264394.	264394.	264394.
TOTAL PRODUCTION COST	264394.	264394.	264394.	264394.	264394.	264394.	264394.
UNIT PRODUCTION COST	0.1355	0.1355	0.1355	0.1355	0.1355	0.1355	0.1355
UNIT PRODUCTION COST	0.1355	0.1355	0.1355	0.1355	0.1355	0.1355	0.1355

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - WITH CASE (2.439.360 T/Y, C.U.:80%) - (US\$, 1.000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	0.	0.	21346.	21346.	21346.	21346.	21346.	21346.	21346.	21346.
ACCOUNT PAYABLE	0.	0.	21346.	21346.	21346.	21346.	21346.	21346.	21346.	21346.
CRUDE OIL	0.	0.	21140.	21140.	21140.	21140.	21140.	21140.	21140.	21140.
ELECTRICITY	0.	0.	11.	11.	11.	11.	11.	11.	11.	11.
OTHERS	0.	0.	195.	195.	195.	195.	195.	195.	195.	195.
PERMANENT WORKING CAPITAL	0.	0.	-21346.	-21346.	-21346.	-21346.	-21346.	-21346.	-21346.	-21346.
CHANGE IN WORKING CAPITAL	0.	0.	-21346.	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	21346.	21346.	21346.	21346.	21346.	21346.	21346.
ACCOUNT PAYABLE	21346.	21346.	21346.	21346.	21346.	21346.	21346.
CRUDE OIL	21140.	21140.	21140.	21140.	21140.	21140.	21140.
ELECTRICITY	11.	11.	11.	11.	11.	11.	11.
OTHERS	195.	195.	195.	195.	195.	195.	195.
PERMANENT WORKING CAPITAL	-21346.	-21346.	-21346.	-21346.	-21346.	-21346.	-21346.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:50%) - (US\$. 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
OPERATING INCOME	0.	0.	285155.	285155.	285155.	285155.	285155.	285155.	285155.	285155.
TOTAL SALES REVENUE	0.	0.	285155.	285155.	285155.	285155.	285155.	285155.	285155.	285155.
COST OF SALES	0.	0.	260883.	260883.	260883.	260883.	260883.	260887.	260887.	260687.
VARIABLE COST	0.	0.	259175.	259175.	259175.	259175.	259175.	259175.	259175.	259175.
DIRECT FIXED COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
DEPRECIATION AND AMORTIZATION	0.	0.	772.	772.	772.	772.	772.	576.	576.	576.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	0.	0.	24272.	24272.	24272.	24272.	24272.	24468.	24468.	24468.
SALES EXPENSES	0.	0.	1711.	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADMI. EXPENSES	0.	0.	1996.	1996.	1996.	1996.	1996.	1996.	1996.	1996.
OPERATING PROFIT	0.	0.	20565.	20565.	20565.	20565.	20565.	20761.	20761.	20761.
NON-OPERATING EXPENSES	0.	0.	2397.	1917.	1438.	959.	479.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2397.	1817.	1438.	959.	479.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	18168.	18648.	19127.	19606.	20086.	20761.	20761.	20761.
INCOME TAX	0.	0.	7267.	7459.	7651.	7842.	3034.	8304.	8304.	8304.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	10901.	11189.	11476.	11764.	12051.	12456.	12456.	12456.
DIVIDENDS	0.	0.	545.	559.	574.	588.	609.	623.	623.	623.
RETAINED EARNINGS	0.	0.	10356.	10629.	10902.	11176.	11449.	11834.	11834.	11834.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - WITH CASE (2.439.360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
OPERATING INCOME	285155.	285155.	285155.	285155.	285155.	285155.	285155.
TOTAL SALES REVENUE	285155.	285155.	285155.	285155.	285155.	285155.	285155.
COST OF SALES	260687.	260687.	260687.	260687.	260687.	260687.	260687.
VARIABLE COST	259175.	259175.	259175.	259175.	259175.	259175.	259175.
DIRECT FIXED COST	936.	936.	936.	936.	936.	936.	936.
DEPRECIATION AND AMORTIZATION	576.	576.	576.	576.	576.	576.	576.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	24468.	24468.	24468.	24468.	24468.	24468.	24468.
SALES EXPENSES	1711.	1711.	1711.	1711.	1711.	1711.	1711.
GENERAL & ADMI. EXPENSES	1996.	1996.	1996.	1996.	1996.	1996.	1996.
OPERATING PROFIT	20761.	20761.	20761.	20761.	20761.	20761.	20761.
NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	20761.	20761.	20761.	20761.	20761.	20761.	20761.
INCOME TAX	8304.	8304.	8304.	8304.	8304.	8304.	8304.
NET PROFIT OR (LOSS) AFTER TAX	12456.	12456.	12456.	12456.	12456.	12456.	12456.
DIVIDENDS	623.	623.	623.	623.	623.	623.	623.
RETAINED EARNINGS	11834.	11834.	11834.	11834.	11834.	11834.	11834.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:60%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
SOURCE OF FUNDS										
CASH GENERATED FROM OPERATION	15339.	23008.	14070.	13878.	13686.	13494.	13303.	13033.	13033.	13033.
PROFIT AFT. TAX, BFR INT, DEPRECIATION AND AMORTIZATION	0.	0.	13298.	13106.	12914.	12722.	12531.	12456.	12456.	12456.
FINANCIAL RESOURCES	0.	0.	772.	772.	772.	772.	772.	576.	576.	576.
SHARE CAPITAL	15339.	23008.	0.	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS										
FIXED CAPITAL EXPENDITURE	3849.	5773.	-14570.	6311.	5847.	5362.	4917.	623.	623.	623.
NON-DEPRECIABLE ASSETS DEPRECIABLE FIXED ASSETS INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	3630.	5445.	0.	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	219.	328.	0.	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT REPAYMENT OF SHORT TERM DEBT INTEREST ON MIDDLE TERM DEBT INTEREST ON SHORT TERM DEBT	0.	0.	-21346.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	6231.	5752.	5273.	4793.	4314.	0.	0.	0.
CASH INCREASE OR (DECREASE)	11430.	17235.	28639.	7566.	7840.	8113.	8386.	12410.	12410.	12410.
BEGINNING CASH BALANCE	0.	11490.	28725.	57365.	64931.	72771.	80884.	89270.	101679.	114089.
ENDING CASH BALANCE	11490.	28725.	57365.	64931.	72771.	80884.	89270.	101679.	114089.	126499.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - WITH CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
SOURCE OF FUNDS							
CASH GENERATED FROM OPERATION	13033.	13033.	13033.	13033.	13033.	13033.	13033.
PROFIT AFT. TAX, 8FR INT	12456.	12456.	12456.	12456.	12456.	12456.	12456.
DEPRECIATION AND AMORTIZATION	576.	576.	576.	576.	576.	576.	576.
FINANCIAL RESOURCES	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	623.	623.	623.	623.	623.	623.	623.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	623.	623.	623.	623.	623.	623.	623.
CASH INCREASE OR (DECREASE)	12410.	12410.	12410.	12410.	12410.	12410.	12410.
BEGINNING CASH BALANCE	126499.	138909.	151318.	163728.	176138.	188548.	200957.
ENDING CASH BALANCE	138909.	151318.	163728.	176138.	188548.	200957.	213367.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 BALANCE SHEET
 - WITH CASE (2.439.360 T/Y. C.U. 1.60%) - (US\$, 1.000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
ASSETS	15339.	36347.	66214.	73009.	80076.	87417.	95031.	106865.	118698.	130532.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	11490.	28725.	57365.	64931.	72771.	80884.	89270.	101679.	114089.	126499.
NET FIXED ASSETS	3849.	9622.	8850.	8078.	7306.	6534.	5762.	5186.	4609.	4033.
INVESTMENT	3849.	9622.	9622.	9622.	9622.	9622.	9622.	9622.	9622.	9622.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	3630.	9075.	9075.	9075.	9075.	9075.	9075.	9075.	9075.	9075.
AMORTIZATION	219.	547.	547.	547.	547.	547.	547.	547.	547.	547.
LESS: ACC. DEPRECIATION	0.	0.	772.	1544.	2316.	3088.	3860.	4436.	5012.	5589.
LIABILITIES	7669.	19173.	36685.	32850.	29016.	25181.	21346.	21346.	21346.	21346.
CURRENT LIABILITIES	0.	3835.	25181.	25181.	25181.	25181.	21346.	21346.	21346.	21346.
ACCOUNT PAYABLE	0.	0.	21346.	21346.	21346.	21346.	21346.	21346.	21346.	21346.
CURRENT PORTION OF M/T DEBT	0.	3835.	3835.	3835.	3835.	3835.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	7669.	15339.	11504.	7669.	3835.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT BALANCE	7669.	15339.	11504.	7669.	3835.	0.	0.	0.	0.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	7669.	19173.	29529.	40156.	51061.	62236.	73685.	85519.	97352.	109186.
SHARE CAPITAL	7669.	19173.	19173.	19173.	19173.	19173.	19173.	19173.	19173.	19173.
ACC. RETAINED EARNINGS	0.	0.	10356.	20985.	31887.	43063.	54512.	66345.	78179.	90012.
LIABILITIES & S/H EQUITY	15339.	38347.	66214.	73009.	80076.	87417.	95031.	106865.	118698.	130532.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 BALANCE SHEET
 - WITH CASE (2,439,360 T/Y, C.U.:80X) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
ASSETS	142366.	154199.	166033.	177666.	189700.	201534.	213367.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	13909.	151318.	163728.	176138.	188548.	200957.	213367.
NET FIXED ASSETS	3457.	2681.	2305.	1729.	1152.	576.	0.
INVESTMENT	9622.	9622.	9622.	9622.	9622.	9622.	9622.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	9075.	9075.	9075.	9075.	9075.	9075.	9075.
AMORTIZATION	547.	547.	547.	547.	547.	547.	547.
LESS: ACC. DEPRECIATION	6165.	6741.	7317.	7893.	8469.	9046.	9622.
LIABILITIES	21346.	21346.	21346.	21346.	21346.	21346.	21346.
CURRENT LIABILITIES	21346.	21346.	21346.	21346.	21346.	21346.	21346.
ACCOUNT PAYABLE	21346.	21346.	21346.	21346.	21346.	21346.	21346.
CURRENT PORTION OF M/T DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT BALANCE	0.	0.	0.	0.	0.	0.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	121019.	132853.	144687.	156520.	168354.	180187.	192021.
SHARE CAPITAL	19173.	19173.	19173.	19173.	19173.	19173.	19173.
ACC. RETAINED EARNINGS	101846.	113679.	125513.	137347.	149180.	161014.	172847.
LIABILITIES & S/H EQUITY	142366.	154199.	166033.	177666.	189700.	201534.	213367.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 MIDDLE TERM DEBT
 - WITH CASE (2.439.360 T/Y. C.U.:80X) - (US\$. 1.000)

YEAR	SER. NO.	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1997	1	0.	0.	0.	7669.
1998	2	0.	0.	0.	19173.
1999	3	3835.	2397.	6231.	15339.
2000	4	3835.	1917.	5752.	11504.
2001	5	3835.	1436.	5273.	7669.
2002	6	3835.	959.	4793.	3835.
2003	7	3835.	479.	4314.	0.
2004	8	0.	0.	0.	0.
2005	9	0.	0.	0.	0.
2006	10	0.	0.	0.	0.
2007	11	0.	0.	0.	0.
2008	12	0.	0.	0.	0.
2009	13	0.	0.	0.	0.
2010	14	0.	0.	0.	0.
2011	15	0.	0.	0.	0.
2012	16	0.	0.	0.	0.
2013	17	0.	0.	0.	0.
TOTAL		19173.	7190.	26364.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PROFITABILITY AND FINANCIAL INDICATORS
 - WITH CASE (2,439,360 T/Y, C.U.:60%) - (US\$. 1,000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1999	3.8	36.9	188.8	56.9	0.0	0.0	2.26	28 / 72	24.1	61346.2	39.8
2000	3.9	27.9	193.8	58.4	0.0	0.0	2.41	16 / 84	22.6	61240.1	38.3
2001	4.0	22.5	198.8	59.9	0.0	0.0	2.60	7 / 93	21.1	61132.0	36.8
2002	4.1	18.9	203.8	61.4	0.0	0.0	2.82	0 / 100	19.6	61023.9	35.3
2003	4.2	16.4	208.8	62.9	0.0	0.0	3.08	0 / 100	18.2	60915.9	33.8
2004	4.4	14.6	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2005	4.4	12.8	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2006	4.4	11.4	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2007	4.4	10.3	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2008	4.4	9.4	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2009	4.4	8.6	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2010	4.4	8.0	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2011	4.4	7.4	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2012	4.4	6.9	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
2013	4.4	6.5	215.8	65.0	0.0	0.0	*****	0 / 100	16.1	59482.8	14.3
AVERAGE1	4.3	14.6	210.1	63.3	0.0	0.0	*****	3 / 97	17.7	60032.8	21.8
AVERAGE2	4.3	10.9	192.2	57.9	0.0	0.0	7.54	3 / 97			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

* NOTE FOR (9)(10)(11)
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 RETURN ON INVESTMENT (IN '94 FIXED PRICE)
 - WITH CASE (2,439,360 T/Y, C.U.:80%) - (U.S\$. 1,000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	(1) GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	(2) GROSS CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW	(5) AFT-TAX NET IN-FLOW
							(2)-(1)	(4)-(3)	
1997	3630.	0.	3630.	0.	0.	0.	-3630.	-3630.	
1998	5445.	0.	5445.	0.	0.	0.	-5445.	-5445.	
1999	0.	-21346.	-21346.	20565.	772.	21337.	42683.	35416.	
2000	0.	0.	0.	20565.	772.	21337.	21337.	13678.	
2001	0.	0.	0.	20565.	772.	21337.	21337.	13656.	
2002	0.	0.	0.	20565.	772.	21337.	21337.	13494.	
2003	0.	0.	0.	20565.	772.	21337.	21337.	13303.	
2004	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2005	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2006	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2007	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2008	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2009	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2010	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2011	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2012	0.	0.	0.	20761.	576.	21337.	21337.	13033.	
2013	-0.	21346.	21346.	20761.	576.	21337.	-9.	-8314.	
	9075.		9075.	310430.	9522.	320052.	121295.	310978.	189682.

INTERNAL RATE OF RETURN

ON (4) BFR-TAX NET IN-FLOW (2)-(1)***** PER CENT
 ON (5) AFT-TAX NET IN-FLOW (4)-(3) 177.87 PER CENT

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
RATED CAPACITY (FUEL GAS)			9504.	9504.	9504.	9504.	9504.	9504.	9504.	9504.
CAPACITY UTILIZATION (FUEL GAS)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	7603.	7603.	7603.	7603.	7603.	7603.	7603.	7603.
INCREASE IN INVENTORY (FUEL GAS)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	7603.	7603.	7603.	7603.	7603.	7603.	7603.	7603.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050
SALES REVENUE (FUEL GAS)	0.0	0.0	798.	798.	798.	798.	798.	798.	798.	798.
RATED CAPACITY (LPG)			1.	1.	1.	1.	1.	1.	1.	1.
CAPACITY UTILIZATION (LPG)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	1.	1.	1.	1.	1.	1.	1.	1.
INCREASE IN INVENTORY (LPG)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	1.	1.	1.	1.	1.	1.	1.	1.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE (LPG)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RATED CAPACITY (L/H NAPHTHA)			471240.	471240.	471240.	471240.	471240.	471240.	471240.	471240.
CAPACITY UTILIZATION (L/H NAPHTHA)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	376992.	376992.	376992.	376992.	376992.	376992.	376992.	376992.
INC. IN INVENTORY (L/H NAPHTHA)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	376992.	376992.	376992.	376992.	376992.	376992.	376992.	376992.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
SALES REVENUE (L/H NAPHTHA)	0.0	0.0	64089.	64089.	64089.	64089.	64089.	64089.	64089.	64089.
RATED CAPACITY (KEROSENE)			162360.	162360.	162360.	162360.	162360.	162360.	162360.	162360.
CAPACITY UTILIZATION (KEROSENE)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	129888.	129888.	129888.	129888.	129888.	129888.	129888.	129888.
INC. IN INVENTORY (KEROSENE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	129888.	129888.	129888.	129888.	129888.	129888.	129888.	129888.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900
SALES REVENUE (KEROSENE)	0.0	0.0	24679.	24679.	24679.	24679.	24679.	24679.	24679.	24679.
RATED CAPACITY (GAS OIL)			496584.	496584.	496584.	496584.	496584.	496584.	496584.	496584.
CAPACITY UTILIZATION (GAS OIL)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	397267.	397267.	397267.	397267.	397267.	397267.	397267.	397267.
INCREASE IN INVENTORY (GAS OIL)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	397267.	397267.	397267.	397267.	397267.	397267.	397267.	397267.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
SALES REVENUE (GAS OIL)	0.0	0.0	71508.	71508.	71508.	71508.	71508.	71508.	71508.	71508.
RATED CAPACITY (V.G.O.)			683496.	683496.	683496.	683496.	683496.	683496.	683496.	683496.
CAPACITY UTILIZATION (V.G.O.)	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	546797.	546797.	546797.	546797.	546797.	546797.	546797.	546797.
INCREASE IN INVENTORY (V.G.O.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	546797.	546797.	546797.	546797.	546797.	546797.	546797.	546797.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
SALES REVENUE (V.G.O.)	0.0	0.0	87488.	87488.	87488.	87488.	87488.	87488.	87488.	87488.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION AND SALES PLAN
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
RATED CAPACITY (F.O.(LS))			84744.	84744.	84744.	84744.	84744.	84744.	84744.	84744.
CAPACITY UTIL'N (F.O.(LS))	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	67795.	67795.	67795.	67795.	67795.	67795.	67795.	67795.
INC. IN INVENTORY (F.O.(LS))	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	67795.	67795.	67795.	67795.	67795.	67795.	67795.	67795.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O.(LS))	0.0	0.0	5763.	5763.	5763.	5763.	5763.	5763.	5763.	5763.
RATED CAPACITY (F.O.(HS))			531432.	531432.	531432.	531432.	531432.	531432.	531432.	531432.
CAPACITY UTILIZATION (F.O.(HS))	0.0	0.0	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	0.0	0.0	425146.	425146.	425146.	425146.	425146.	425146.	425146.	425146.
INC. IN INVENTORY (F.O.(HS))	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALES (VOLUME)	0.0	0.0	425146.	425146.	425146.	425146.	425146.	425146.	425146.	425146.
UNIT SALES PRICE (US\$/T)	0.0	0.0	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O.(HS))	0.0	0.0	27634.	27634.	27634.	27634.	27634.	27634.	27634.	27634.
TOTAL SALES REVENUE	0.0	0.0	281958.	281958.	281958.	281958.	281958.	281958.	281958.	281958.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
RATED CAPACITY (FUEL GAS)	9504.	9504.	9504.	9504.	9504.	9504.	9504.
CAPACITY UTILIZATION (FUEL GAS)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	7603.	7603.	7603.	7603.	7603.	7603.	7603.
INCREASE IN INVENTORY (FUEL GAS)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	7603.	7603.	7603.	7603.	7603.	7603.	7603.
UNIT SALES PRICE (US\$/T)	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050	0.1050
SALES REVENUE (FUEL GAS)	798.	798.	798.	798.	798.	798.	798.
RATED CAPACITY (LPG)	1.	1.	1.	1.	1.	1.	1.
CAPACITY UTILIZATION (LPG)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	1.	1.	1.	1.	1.	1.	1.
INCREASE IN INVENTORY (LPG)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	1.	1.	1.	1.	1.	1.	1.
UNIT SALES PRICE (US\$/T)	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200	0.1200
SALES REVENUE (LPG)	0.	0.	0.	0.	0.	0.	0.
RATED CAPACITY (L/H NAPHTHA)	471240.	471240.	471240.	471240.	471240.	471240.	471240.
CAPACITY UTIL'N (L/H NAPHTHA)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	376992.	376992.	376992.	376992.	376992.	376992.	376992.
INC. IN INVENTORY (L/H NAPHTHA)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	376992.	376992.	376992.	376992.	376992.	376992.	376992.
UNIT SALES PRICE (US\$/T)	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
SALES REVENUE (L/H NAPHTHA)	64089.	64089.	64089.	64089.	64089.	64089.	64089.
RATED CAPACITY (KEROSENE)	162360.	162360.	162360.	162360.	162360.	162360.	162360.
CAPACITY UTILIZATION (KEROSENE)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	129888.	129888.	129888.	129888.	129888.	129888.	129888.
INC. IN INVENTORY (KEROSENE)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	129888.	129888.	129888.	129888.	129888.	129888.	129888.
UNIT SALES PRICE (US\$/T)	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900	0.1900
SALES REVENUE (KEROSENE)	24679.	24679.	24679.	24679.	24679.	24679.	24679.
RATED CAPACITY (GAS OIL)	496584.	496584.	496584.	496584.	496584.	496584.	496584.
CAPACITY UTILIZATION (GAS OIL)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	397267.	397267.	397267.	397267.	397267.	397267.	397267.
INCREASE IN INVENTORY (GAS OIL)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	397267.	397267.	397267.	397267.	397267.	397267.	397267.
UNIT SALES PRICE (US\$/T)	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800	0.1800
SALES REVENUE (GAS OIL)	71508.	71508.	71508.	71508.	71508.	71508.	71508.
RATED CAPACITY (V.G.O.)	683496.	683496.	683496.	683496.	683496.	683496.	683496.
CAPACITY UTILIZATION (V.G.O.)	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	546797.	546797.	546797.	546797.	546797.	546797.	546797.
INCREASE IN INVENTORY (V.G.O.)	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	546797.	546797.	546797.	546797.	546797.	546797.	546797.
UNIT SALES PRICE (US\$/T)	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600
SALES REVENUE (V.G.O.)	87488.	87488.	87488.	87488.	87488.	87488.	87488.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION AND SALES PLAN
 - W/O CASE (2.439.360 T/Y, C.U.:80%) - (US\$, 1.000)

YEAR	2007	2008	2009	2010	2011	2012	2013
RATED CAPACITY (F.O. (LS))	84744.	84744.	84744.	84744.	84744.	84744.	84744.
CAPACITY UTIL'N (F.O. (LS))	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	67795.	67795.	67795.	67795.	67795.	67795.	67795.
INC. IN INVENTORY (F.O. (LS))	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	67795.	67795.	67795.	67795.	67795.	67795.	67795.
UNIT SALES PRICE (US\$/T)	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O. (LS))	5763.	5763.	5763.	5763.	5763.	5763.	5763.
RATED CAPACITY (F.O. (HS))	531432.	531432.	531432.	531432.	531432.	531432.	531432.
CAPACITY UTILIZATION (F.O. (HS))	0.800	0.800	0.800	0.800	0.800	0.800	0.800
PRODUCTION (VOLUME)	425146.	425146.	425146.	425146.	425146.	425146.	425146.
INC. IN INVENTORY (F.O. (HS))	0.	0.	0.	0.	0.	0.	0.
SALES (VOLUME)	425146.	425146.	425146.	425146.	425146.	425146.	425146.
UNIT SALES PRICE (US\$/T)	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650	0.0650
SALES REVENUE (F.O. (HS))	27634.	27634.	27634.	27634.	27634.	27634.	27634.
TOTAL SALES REVENUE	281958.	281958.	281958.	281958.	281958.	281958.	281958.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:80X) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PRODUCTION (VOLUME)	0.	0.	7603.	7603.	7603.	7603.	7603.	7603.	7603.	7603.
RAW MATERIAL COST	0.	0.	253694.	253694.	253694.	253694.	253694.	253694.	253694.	253694.
CRUDE OIL	0.	0.	253694.	253694.	253694.	253694.	253694.	253694.	253694.	253694.
UTILITIES COST	0.	0.	5444.	5444.	5444.	5444.	5444.	5444.	5444.	5444.
ELECTRICITY	0.	0.	854.	854.	854.	854.	854.	854.	854.	854.
STEAM	0.	0.	1541.	1541.	1541.	1541.	1541.	1541.	1541.	1541.
COOLING WATER	0.	0.	532.	532.	532.	532.	532.	532.	532.	532.
FUEL GAS	0.	0.	1025.	1025.	1025.	1025.	1025.	1025.	1025.	1025.
FUEL OIL	0.	0.	1493.	1493.	1493.	1493.	1493.	1493.	1493.	1493.
VARIABLE COST	0.	0.	259138.	259138.	259138.	259138.	259138.	259138.	259138.	259138.
EMPLOYMENT COST	0.	0.	175.	175.	175.	175.	175.	175.	175.	175.
EMPLOYMENT COST	0.	0.	175.	175.	175.	175.	175.	175.	175.	175.
MAINTENANCE COST	0.	0.	517.	517.	517.	517.	517.	517.	517.	517.
MAINTENANCE COST	0.	0.	517.	517.	517.	517.	517.	517.	517.	517.
OVERHEAD COST	0.	0.	245.	245.	245.	245.	245.	245.	245.	245.
OVERHEAD COST	0.	0.	245.	245.	245.	245.	245.	245.	245.	245.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
LAND LEASE COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
DIRECT FIXED COST	0.	0.	260074.	260074.	260074.	260074.	260074.	260074.	260074.	260074.
DIRECT FIXED COST	0.	0.	260074.	260074.	260074.	260074.	260074.	260074.	260074.	260074.
CASH FACTORY COST	0.	0.	260074.	260074.	260074.	260074.	260074.	260074.	260074.	260074.
CASH FACTORY COST	0.	0.	260074.	260074.	260074.	260074.	260074.	260074.	260074.	260074.
DEPRECIABLE ASSETS	0.	0.	218.	218.	218.	218.	218.	218.	218.	218.
DEPRECIABLE ASSETS	0.	0.	218.	218.	218.	218.	218.	218.	218.	218.
PRE-OPERATIONAL EXPENSES	0.	0.	33.	33.	33.	33.	33.	33.	33.	33.
PRE-OPERATIONAL EXPENSES	0.	0.	33.	33.	33.	33.	33.	33.	33.	33.
INTEREST DRG CONST.	0.	0.	41.	41.	41.	41.	41.	41.	41.	41.
INTEREST DRG CONST.	0.	0.	41.	41.	41.	41.	41.	41.	41.	41.
DEPRECIATION AND AMORTIZATION	0.	0.	292.	292.	292.	292.	292.	292.	292.	292.
DEPRECIATION AND AMORTIZATION	0.	0.	292.	292.	292.	292.	292.	292.	292.	292.
TOTAL FACTORY COST	0.	0.	260366.	260366.	260366.	260366.	260366.	260366.	260366.	260366.
TOTAL FACTORY COST	0.	0.	260366.	260366.	260366.	260366.	260366.	260366.	260366.	260366.
UNIT FACTORY COST	0.0	0.0	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334
UNIT FACTORY COST	0.0	0.0	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334
SALES EXPENSES	0.	0.	1692.	1692.	1692.	1692.	1692.	1692.	1692.	1692.
SALES EXPENSES	0.	0.	1692.	1692.	1692.	1692.	1692.	1692.	1692.	1692.
GENERAL & ADM. EXPENSES	0.	0.	1692.	1692.	1692.	1692.	1692.	1692.	1692.	1692.
GENERAL & ADM. EXPENSES	0.	0.	1692.	1692.	1692.	1692.	1692.	1692.	1692.	1692.
OTHER EXPENSES	0.	0.	282.	282.	282.	282.	282.	282.	282.	282.
OTHER EXPENSES	0.	0.	282.	282.	282.	282.	282.	282.	282.	282.
GENERAL & ADM. EXPENSES	0.	0.	1974.	1974.	1974.	1974.	1974.	1974.	1974.	1974.
GENERAL & ADM. EXPENSES	0.	0.	1974.	1974.	1974.	1974.	1974.	1974.	1974.	1974.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	806.	403.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	806.	403.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	806.	403.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	806.	403.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	0.0	0.0	266047.	265644.	265241.	264838.	264435.	263958.	263958.	263958.
TOTAL PRODUCTION COST	0.0	0.0	266047.	265644.	265241.	264838.	264435.	263958.	263958.	263958.
UNIT PRODUCTION COST	0.0	0.0	0.1363	0.1361	0.1359	0.1357	0.1355	0.1353	0.1353	0.1353
UNIT PRODUCTION COST	0.0	0.0	0.1363	0.1361	0.1359	0.1357	0.1355	0.1353	0.1353	0.1353

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
PRODUCTION (VOLUME)	7603.	7603.	7603.	7603.	7603.	7603.	7603.
RAW MATERIAL COST	253694.	253694.	253694.	253694.	253694.	253694.	253694.
CRUDE OIL	253694.	253694.	253694.	253694.	253694.	253694.	253694.
UTILITIES COST	5444.	5444.	5444.	5444.	5444.	5444.	5444.
ELECTRICITY	854.	854.	854.	854.	854.	854.	854.
STEAM	1541.	1541.	1541.	1541.	1541.	1541.	1541.
COOLING WATER	532.	532.	532.	532.	532.	532.	532.
FUEL GAS	1025.	1025.	1025.	1025.	1025.	1025.	1025.
FUEL OIL	1493.	1493.	1493.	1493.	1493.	1493.	1493.
VARIABLE COST	259136.	259136.	259136.	259136.	259136.	259136.	259136.
EMPLOYMENT COST	175.	175.	175.	175.	175.	175.	175.
EMPLOYMENT COST	175.	175.	175.	175.	175.	175.	175.
MAINTENANCE COST	517.	517.	517.	517.	517.	517.	517.
MAINTENANCE COST	517.	517.	517.	517.	517.	517.	517.
OVERHEAD COST	245.	245.	245.	245.	245.	245.	245.
OVERHEAD COST	245.	245.	245.	245.	245.	245.	245.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	936.	936.	936.	936.	936.	936.	936.
CASH FACTORY COST	260074.	260074.	260074.	260074.	260074.	260074.	260074.
DEPRECIABLE ASSETS	218.	218.	218.	218.	218.	218.	218.
DEPRECIABLE ASSETS	218.	218.	218.	218.	218.	218.	218.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG CONST.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	218.	218.	218.	218.	218.	218.	218.
TOTAL FACTORY COST	260292.	260292.	260292.	260292.	260292.	260292.	260292.
UNIT FACTORY COST	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334	0.1334
SALES EXPENSES	1692.	1692.	1692.	1692.	1692.	1692.	1692.
GENERAL & ADMI. EXPENSES	1692.	1692.	1692.	1692.	1692.	1692.	1692.
OTHER EXPENSES	282.	282.	282.	282.	282.	282.	282.
GENERAL & ADMI. EXPENSES	1974.	1974.	1974.	1974.	1974.	1974.	1974.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	263956.	263956.	263956.	263956.	263956.	263956.	263956.
UNIT PRODUCTION COST	0.1353	0.1353	0.1353	0.1353	0.1353	0.1353	0.1353

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:50%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	0.	21343.	21343.	21343.	21343.	21343.	21343.	21343.	21343.	21343.
ACCOUNT PAYABLE	0.	21343.	21343.	21343.	21343.	21343.	21343.	21343.	21343.	21343.
CRUDE OIL	0.	21140.	21140.	21140.	21140.	21140.	21140.	21140.	21140.	21140.
ELECTRICITY	0.	12.	12.	12.	12.	12.	12.	12.	12.	12.
OTHERS	0.	191.	191.	191.	191.	191.	191.	191.	191.	191.
PERMANENT WORKING CAPITAL	0.	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.
CHANGE IN WORKING CAPITAL	0.	0.	-21343.	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:60%) - (US\$. 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	21343.	21343.	21343.	21343.	21343.	21343.	21343.
ACCOUNT PAYABLE	21343.	21343.	21343.	21343.	21343.	21343.	21343.
CRUDE OIL	21140.	21140.	21140.	21140.	21140.	21140.	21140.
ELECTRICITY	12.	12.	12.	12.	12.	12.	12.
OTHERS	191.	191.	191.	191.	191.	191.	191.
PERMANENT WORKING CAPITAL	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.	-21343.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
OPERATING INCOME	0.	0.	281958.	281958.	281958.	281958.	281958.	281958.	281958.	281958.
TOTAL SALES REVENUE	0.	0.	281958.	281958.	281958.	281958.	281958.	281958.	281958.	281958.
COST OF SALES	0.	0.	260366.	260366.	260366.	260366.	260366.	260292.	260292.	260292.
VARIABLE COST	0.	0.	259138.	259138.	259138.	259138.	259138.	259138.	259138.	259138.
DIRECT FIXED COST	0.	0.	936.	936.	936.	936.	936.	936.	936.	936.
DEPRECIATION AND AMORTIZATION	0.	0.	292.	292.	292.	292.	292.	218.	218.	218.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	0.	0.	21592.	21592.	21592.	21592.	21592.	21666.	21666.	21666.
SALES EXPENSES	0.	0.	1692.	1692.	1692.	1692.	1692.	1692.	1692.	1692.
GENERAL & ADMI. EXPENSES	0.	0.	1974.	1974.	1974.	1974.	1974.	1974.	1974.	1974.
OPERATING PROFIT	0.	0.	17927.	17927.	17927.	17927.	17927.	18001.	18001.	18001.
NON-OPERATING EXPENSES	0.	0.	2015.	1612.	1209.	606.	403.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	606.	403.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	15912.	16315.	16718.	17121.	17524.	18001.	18001.	18001.
INCOME TAX	0.	0.	6365.	6526.	6687.	6848.	7009.	7200.	7200.	7200.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	9547.	9789.	10031.	10272.	10514.	10800.	10800.	10800.
DIVIDENDS	0.	0.	477.	489.	502.	514.	528.	540.	540.	540.
RETAINED EARNINGS	0.	0.	9070.	9299.	9529.	9759.	9988.	10260.	10260.	10260.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:60%) - (US\$. 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
OPERATING INCOME	281958.	281958.	281958.	281958.	281958.	281958.	281958.
TOTAL SALES REVENUE	281958.	281958.	281958.	281958.	281958.	281958.	281958.
COST OF SALES	260292.	260292.	260292.	260292.	260292.	260292.	260292.
VARIABLE COST	259138.	259138.	259138.	259138.	259138.	259138.	259138.
DIRECT FIXED COST	936.	936.	936.	936.	936.	936.	936.
DEPRECIATION AND AMORTIZATION	218.	218.	218.	218.	218.	218.	218.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	21666.	21666.	21666.	21666.	21666.	21666.	21666.
SALES EXPENSES	1892.	1892.	1892.	1892.	1892.	1892.	1892.
GENERAL & ADMI. EXPENSES	1974.	1974.	1974.	1974.	1974.	1974.	1974.
OPERATING PROFIT	18001.	18001.	18001.	18001.	18001.	18001.	18001.
NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	18001.	18001.	18001.	18001.	18001.	18001.	18001.
INCOME TAX	7200.	7200.	7200.	7200.	7200.	7200.	7200.
NET PROFIT OR (LOSS) AFTER TAX	10800.	10800.	10800.	10800.	10800.	10800.	10800.
DIVIDENDS	540.	540.	540.	540.	540.	540.	540.
RETAINED EARNINGS	10260.	10260.	10260.	10260.	10260.	10260.	10260.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:60K) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
SOURCE OF FUNDS										
CASH GENERATED FROM OPERATION	12894.	19341.	11854.	11693.	11532.	11370.	11209.	11018.	11018.	11018.
PROFIT AFT. TAX, BFR INT.	0.	0.	11854.	11693.	11532.	11370.	11209.	11018.	11018.	11018.
DEPRECIATION AND AMORTIZATION	0.	0.	11562.	11401.	11239.	11078.	10917.	10800.	10800.	10800.
FINANCIAL RESOURCES	12894.	19341.	0.	292.	292.	292.	292.	218.	218.	218.
SHARE CAPITAL	6447.	9670.	0.	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	6447.	9670.	0.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS										
FIXED CAPITAL EXPENDITURE	1457.	2185.	-15628.	5325.	4934.	4543.	4152.	540.	540.	540.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	1374.	2061.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	83.	124.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	-21343.	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	5238.	4835.	4432.	4029.	3626.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	3223.	3223.	3223.	3223.	3223.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2015.	1612.	1209.	806.	403.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	477.	489.	502.	514.	526.	540.	540.	540.
CASH INCREASE OR (DECREASE)	11437.	17156.	27462.	6366.	6599.	6828.	7057.	10476.	10476.	10476.
BEGINNING CASH BALANCE	0.	11437.	28599.	56075.	62443.	69041.	75865.	82925.	93404.	103682.
ENDING CASH BALANCE	11437.	28599.	56075.	62443.	69041.	75866.	82925.	93404.	103682.	114361.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - W/O CASE (2,439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	2007	2006	2009	2010	2011	2012	2013
SOURCE OF FUNDS							
CASH GENERATED FROM OPERATION	11018.	11018.	11018.	11018.	11018.	11018.	11018.
PROFIT AFT. TAX, BFR INT.	10800.	10600.	10800.	10800.	10800.	10800.	10800.
DEPRECIATION AND AMORTIZATION	218.	218.	218.	218.	218.	218.	218.
FINANCIAL RESOURCES	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	540.	540.	540.	540.	540.	540.	540.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	540.	540.	540.	540.	540.	540.	540.
CASH INCREASE OR (DECREASE)	10478.	10478.	10478.	10478.	10478.	10478.	10478.
BEGINNING CASH BALANCE	114361.	124839.	135318.	145796.	156275.	166753.	177231.
ENDING CASH BALANCE	124839.	135318.	145796.	156275.	166753.	177231.	187710.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 BALANCE SHEET
 - W/O CASE (2.439,360 T/Y, C.U.:80%) - (US\$, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
ASSETS	12894.	32235.	59424.	65500.	71806.	78341.	85106.	95367.	105627.	115887.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	11437.	28593.	56075.	62443.	69041.	75868.	82925.	93404.	103682.	114361.
NET FIXED ASSETS	1457.	3642.	3350.	3057.	2765.	2473.	2181.	1963.	1745.	1527.
INVESTMENT	1457.	3642.	3642.	3642.	3642.	3642.	3642.	3642.	3642.	3642.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	1374.	3435.	3435.	3435.	3435.	3435.	3435.	3435.	3435.	3435.
AMORTIZATION	83.	207.	207.	207.	207.	207.	207.	207.	207.	207.
LESS: ACC. DEPRECIATION	0.	0.	292.	584.	877.	1169.	1461.	1679.	1897.	2115.
LIABILITIES	6447.	16117.	34297.	31014.	27790.	24567.	21343.	21343.	21343.	21343.
CURRENT LIABILITIES	0.	3223.	24567.	24567.	24567.	24567.	21343.	21343.	21343.	21343.
ACCOUNT PAYABLE	0.	0.	21343.	21343.	21343.	21343.	21343.	21343.	21343.	21343.
CURRENT PORTION OF M/T DEBT	0.	3223.	3223.	3223.	3223.	3223.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	6447.	12894.	9670.	6447.	3223.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT BALANCE	6447.	12894.	9670.	6447.	3223.	0.	0.	0.	0.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	6447.	16117.	25187.	34486.	44016.	53774.	63763.	74023.	84284.	94544.
SHARE CAPITAL	6447.	16117.	16117.	16117.	16117.	16117.	16117.	16117.	16117.	16117.
ACC. RETAINED EARNINGS	0.	0.	9070.	18369.	27898.	37657.	47646.	57906.	68166.	78427.
LIABILITIES & S/H EQUITY	12894.	32235.	59424.	65500.	71806.	78341.	85106.	95367.	105627.	115887.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 BALANCE SHEET
 - W/O CASE (2,439,360 T/Y, C.U.:80X) - (US\$, 1,000)

YEAR	2007	2006	2009	2010	2011	2012	2013
ASSETS	126146.	136408.	146668.	156929.	167169.	177449.	187710.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	124839.	135318.	145796.	156275.	166753.	177231.	187710.
NET FIXED ASSETS	1309.	1090.	872.	654.	436.	218.	0.
INVESTMENT	3642.	3642.	3642.	3642.	3642.	3642.	3642.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	3435.	3435.	3435.	3435.	3435.	3435.	3435.
AMORTIZATION	207.	207.	207.	207.	207.	207.	207.
LESS: ACC. DEPRECIATION	2333.	2551.	2770.	2988.	3206.	3424.	3642.
LIABILITIES	21343.	21343.	21343.	21343.	21343.	21343.	21343.
CURRENT LIABILITIES	21343.	21343.	21343.	21343.	21343.	21343.	21343.
ACCOUNT PAYABLE	21343.	21343.	21343.	21343.	21343.	21343.	21343.
CURRENT PORTION OF M/T DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT BALANCE	0.	0.	0.	0.	0.	0.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	104804.	115065.	125325.	135585.	145846.	156106.	166366.
SHARE CAPITAL	16117.	16117.	16117.	16117.	16117.	16117.	16117.
ACC. RETAINED EARNINGS	88687.	98947.	109208.	119468.	129728.	139989.	150249.
LIABILITIES & S/H EQUITY	126146.	136408.	146668.	156929.	167169.	177449.	187710.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 MIDDLE TERM DEBT
 - W/O CASE (2.439.360 T/Y. C.U.:80%) - (US\$. 1.000)

AMOUNT OF DEBT		12.500 PER CENT/YEAR		5 YEAR-EQUAL-INSTALLMENT-REPAYMENT (ANNUAL REPAYMENT)	
YEAR	SER.NO	PRINCIPAL	INTEREST	DEBT SERVICE	BALANCE AFT. PAYMENT
1997	1	0.	0.	0.	6447.
1998	2	0.	0.	0.	16117.
1999	3	3223.	2015.	5238.	12894.
2000	4	3223.	1612.	4835.	9670.
2001	5	3223.	1209.	4432.	6447.
2002	6	3223.	806.	4029.	3223.
2003	7	3223.	403.	3626.	0.
2004	8	0.	0.	0.	0.
2005	9	0.	0.	0.	0.
2006	10	0.	0.	0.	0.
2007	11	0.	0.	0.	0.
2008	12	0.	0.	0.	0.
2009	13	0.	0.	0.	0.
2010	14	0.	0.	0.	0.
2011	15	0.	0.	0.	0.
2012	16	0.	0.	0.	0.
2013	17	0.	0.	0.	0.
TOTAL		16117.	6044.	22161.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PROFITABILITY AND FINANCIAL INDICATORS (US\$, 1,000)
 - W/O CASE (2,439,360 T/Y, C.U.:80%) -

YEAR	(1) AFT TAX PROFIT -TO- SALES REV (PCT)	(2) AFT TAX PROFIT -TO- S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PCT)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1999	3.4	37.9	436.9	59.2	0.0	0.0	2.26	28 / 72	24.2	35693.9	41.3
2000	3.5	25.4	448.0	60.7	0.0	0.0	2.42	16 / 84	22.8	35580.9	39.9
2001	3.6	22.8	459.0	62.2	0.0	0.0	2.60	7 / 93	21.4	35528.0	38.5
2002	3.6	19.1	470.1	63.7	0.0	0.0	2.82	0 / 100	20.0	35475.0	37.1
2003	3.7	16.5	481.2	65.2	0.0	0.0	3.09	0 / 100	18.6	35422.0	35.7
2004	3.8	14.6	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2005	3.8	12.8	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2006	3.8	11.4	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2007	3.8	10.3	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2008	3.8	9.4	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2009	3.8	8.6	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2010	3.8	8.0	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2011	3.8	7.4	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2012	3.8	6.9	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
2013	3.8	6.5	494.3	67.0	0.0	0.0	*****	0 / 100	16.9	34688.0	16.1
AVERAGE1	3.7	14.7	492.5	65.4	0.0	0.0	*****	3 / 97	18.4	34967.9	23.6
AVERAGE2	3.7	10.9	441.3	59.8	0.0	0.0	7.57	3 / 97			

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS (SIMPLE AVERAGE)
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE (WEIGHTED AVERAGE)

* NOTE FOR (9) (10) (11)
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 RETURN ON INVESTMENT (IN '94 FIXED PRICE)
 - W/O CASE (2.439.360 T/Y, C.U.:50%) - (US\$. 1.000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	GROSS CASH IN-FLOW	INCOME TAX	BFR-TAX NET IN-FLOW	AFT-TAX NET IN-FLOW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1997	1374.	0.	1374.	0.	0.	0.	0.	-1374.	-1374.
1998	2061.	0.	2061.	0.	0.	0.	0.	-2061.	-2061.
1999	0.	-21343.	-21343.	17927.	292.	18219.	6365.	39562.	33197.
2000	0.	0.	0.	17927.	292.	18219.	6326.	18219.	11693.
2001	0.	0.	0.	17927.	292.	18219.	6687.	18219.	11532.
2002	0.	0.	0.	17927.	292.	18219.	6848.	18219.	11370.
2003	0.	0.	0.	17927.	292.	18219.	7009.	18219.	11209.
2004	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2005	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2006	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2007	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2008	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2009	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2010	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2011	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2012	0.	0.	0.	18001.	218.	18219.	7200.	18219.	11018.
2013	0.	21343.	21343.	18001.	218.	18219.	7200.	-3125.	-10325.
	3435.	0.	3435.	269639.	3642.	273280.	105438.	269846.	164408.

*** IRR CAN NOT BE OBTAINED.BECAUSE OF EXTREMELY HIGH OR LOW ***

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:80%) - (USD, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PRODUCTION (VOLUME)	0.	0.	-3168.	-3168.	-3168.	-3168.	-3168.	-3168.	-3168.	-3168.
RAW MATERIAL COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CRUDE OIL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
UTILITIES COST	0.	0.	37.	37.	37.	37.	37.	37.	37.	37.
ELECTRICITY	0.	0.	-50.	-50.	-50.	-50.	-50.	-50.	-50.	-50.
STEAM	0.	0.	385.	385.	385.	385.	385.	385.	385.	385.
COOLING WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL GAS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	0.	0.	-299.	-299.	-299.	-299.	-299.	-299.	-299.	-299.
VARIABLE COST	0.	0.	37.	37.	37.	37.	37.	37.	37.	37.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH FACTORY COST	0.	0.	37.	37.	37.	37.	37.	37.	37.	37.
CASH FACTORY COST	0.	0.	37.	37.	37.	37.	37.	37.	37.	37.
DEPRECIABLE ASSETS	0.	0.	358.	358.	358.	358.	358.	358.	358.	358.
DEPRECIABLE ASSETS	0.	0.	358.	358.	358.	358.	358.	358.	358.	358.
PRE-OPERATIONAL EXPENSES	0.	0.	54.	54.	54.	54.	54.	54.	54.	54.
PRE-OPERATIONAL EXPENSES	0.	0.	54.	54.	54.	54.	54.	54.	54.	54.
INTEREST DRG CONST.	0.	0.	68.	68.	68.	68.	68.	68.	68.	68.
INTEREST DRG CONST.	0.	0.	68.	68.	68.	68.	68.	68.	68.	68.
DEPRECIATION AND AMORTIZATION	0.	0.	480.	480.	480.	480.	480.	480.	480.	480.
DEPRECIATION AND AMORTIZATION	0.	0.	480.	480.	480.	480.	480.	480.	480.	480.
TOTAL FACTORY COST	0.0	0.0	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002
TOTAL FACTORY COST	0.0	0.0	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002	0.0002
UNIT FACTORY COST	0.	0.	19.	19.	19.	19.	19.	19.	19.	19.
UNIT FACTORY COST	0.	0.	19.	19.	19.	19.	19.	19.	19.	19.
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	19.	19.	19.	19.	19.	19.	19.	19.
GENERAL & ADMI. EXPENSES	0.	0.	19.	19.	19.	19.	19.	19.	19.	19.
OTHER EXPENSES	0.	0.	3.	3.	3.	3.	3.	3.	3.	3.
OTHER EXPENSES	0.	0.	3.	3.	3.	3.	3.	3.	3.	3.
GENERAL & ADMI. EXPENSES	0.	0.	22.	22.	22.	22.	22.	22.	22.	22.
GENERAL & ADMI. EXPENSES	0.	0.	22.	22.	22.	22.	22.	22.	22.	22.
INTEREST ON MIDDLE TERM DEBT	0.	0.	362.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	362.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	362.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	362.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	0.0	0.0	0.0005	0.0004	0.0004	0.0004	0.0003	0.0002	0.0002	0.0002
TOTAL PRODUCTION COST	0.0	0.0	0.0005	0.0004	0.0004	0.0003	0.0002	0.0002	0.0002	0.0002
UNIT PRODUCTION COST	0.0	0.0	940.	864.	787.	711.	635.	437.	437.	437.
UNIT PRODUCTION COST	0.0	0.0	940.	864.	787.	711.	635.	437.	437.	437.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:30%) - (USD. 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
PRODUCTION (VOLUME)	-3168.	-3168.	-3168.	-3168.	-3168.	-3168.	-3168.
RAW MATERIAL COST	0.	0.	0.	0.	0.	0.	0.
CRUDE OIL	0.	0.	0.	0.	0.	0.	0.
UTILITIES COST	37.	37.	37.	37.	37.	37.	37.
ELECTRICITY	-50.	-50.	-50.	-50.	-50.	-50.	-50.
STEAM	385.	385.	385.	385.	385.	385.	385.
COOLING WATER	0.	0.	0.	0.	0.	0.	0.
FUEL GAS	0.	0.	0.	0.	0.	0.	0.
FUEL OIL	-299.	-299.	-299.	-299.	-299.	-299.	-299.
VARIABLE COST	37.	37.	37.	37.	37.	37.	37.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.
CASH FACTORY COST	37.	37.	37.	37.	37.	37.	37.
CASH FACTORY COST	37.	37.	37.	37.	37.	37.	37.
DEPRECIABLE ASSETS	358.	358.	358.	358.	358.	358.	358.
DEPRECIABLE ASSETS	358.	358.	358.	358.	358.	358.	358.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG. CONST.	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG. CONST.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	358.	358.	358.	358.	358.	358.	358.
DEPRECIATION AND AMORTIZATION	358.	358.	358.	358.	358.	358.	358.
TOTAL FACTORY COST	395.	395.	395.	395.	395.	395.	395.
TOTAL FACTORY COST	395.	395.	395.	395.	395.	395.	395.
UNIT FACTORY COST	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
UNIT FACTORY COST	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
SALES EXPENSES	19.	19.	19.	19.	19.	19.	19.
SALES EXPENSES	19.	19.	19.	19.	19.	19.	19.
GENERAL & ADM. EXPENSES	19.	19.	19.	19.	19.	19.	19.
GENERAL & ADM. EXPENSES	19.	19.	19.	19.	19.	19.	19.
OTHER EXPENSES	3.	3.	3.	3.	3.	3.	3.
OTHER EXPENSES	3.	3.	3.	3.	3.	3.	3.
GENERAL & ADM. EXPENSES	22.	22.	22.	22.	22.	22.	22.
GENERAL & ADM. EXPENSES	22.	22.	22.	22.	22.	22.	22.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	437.	437.	437.	437.	437.	437.	437.
TOTAL PRODUCTION COST	437.	437.	437.	437.	437.	437.	437.
UNIT PRODUCTION COST	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
UNIT PRODUCTION COST	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - INCREMENTAL CASE (\$2,439,360 T/Y, C.U.:80%) * (USD: 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	0.	0.	3.	3.	3.	3.	3.	3.	3.	3.
ACCOUNT PAYABLE	0.	0.	3.	3.	3.	3.	3.	3.	3.	3.
CRUDE OIL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ELECTRICITY	0.	0.	-1.	-1.	-1.	-1.	-1.	-1.	-1.	-1.
OTHERS	0.	0.	4.	4.	4.	4.	4.	4.	4.	4.
PERMANENT WORKING CAPITAL	0.	0.	-3.	-3.	-3.	-3.	-3.	-3.	-3.	-3.
CHANGE IN WORKING CAPITAL	0.	0.	-3.	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:50%) - (USD. 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	3.	3.	3.	3.	3.	3.	3.
ACCOUNT PAYABLE	3.	3.	3.	3.	3.	3.	3.
CRUDE OIL	0.	0.	0.	0.	0.	0.	0.
ELECTRICITY	-1.	-1.	-1.	-1.	-1.	-1.	-1.
OTHERS	4.	4.	4.	4.	4.	4.	4.
PERMANENT WORKING CAPITAL	-3.	-3.	-3.	-3.	-3.	-3.	-3.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:60%) - (USD, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
OPERATING INCOME	0.	0.	3197.	3197.	3197.	3197.	3197.	3197.	3197.	3197.
TOTAL SALES REVENUE	0.	0.	3197.	3197.	3197.	3197.	3197.	3197.	3197.	3197.
COST OF SALES	0.	0.	517.	517.	517.	517.	517.	395.	395.	395.
VARIABLE COST	0.	0.	37.	37.	37.	37.	37.	37.	37.	37.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	0.	0.	480.	480.	480.	480.	480.	358.	358.	358.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	0.	0.	2680.	2680.	2680.	2680.	2680.	2802.	2802.	2802.
SALES EXPENSES	0.	0.	19.	19.	19.	19.	19.	19.	19.	19.
GENERAL & ADMT. EXPENSES	0.	0.	22.	22.	22.	22.	22.	22.	22.	22.
OPERATING PROFIT	0.	0.	2638.	2638.	2638.	2638.	2638.	2760.	2760.	2760.
NON-OPERATING EXPENSES	0.	0.	382.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	382.	306.	229.	153.	76.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	2256.	2338.	2409.	2486.	2562.	2760.	2760.	2760.
INCOME TAX	0.	0.	903.	933.	954.	994.	1025.	1104.	1104.	1104.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	1354.	1400.	1445.	1491.	1537.	1656.	1656.	1656.
DIVIDENDS	0.	0.	68.	70.	72.	75.	77.	83.	83.	83.
RETAINED EARNINGS	0.	0.	1286.	1330.	1373.	1417.	1460.	1573.	1573.	1573.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 INCOME STATEMENTS
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:80%) - (USD, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
OPERATING INCOME	3197.	3197.	3197.	3197.	3197.	3197.	3197.
TOTAL SALES REVENUE	3197.	3197.	3197.	3197.	3197.	3197.	3197.
COST OF SALES	395.	395.	395.	395.	395.	395.	395.
VARIABLE COST	37.	37.	37.	37.	37.	37.	37.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	358.	358.	358.	358.	358.	358.	358.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	2802.	2802.	2802.	2802.	2802.	2802.	2802.
SALES EXPENSES	19.	19.	19.	19.	19.	19.	19.
GENERAL & ADMI. EXPENSES	22.	22.	22.	22.	22.	22.	22.
OPERATING PROFIT	2760.	2760.	2760.	2760.	2760.	2760.	2760.
NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	2760.	2760.	2760.	2760.	2760.	2760.	2760.
INCOME TAX	1104.	1104.	1104.	1104.	1104.	1104.	1104.
NET PROFIT OR (LOSS) AFTER TAX	1656.	1656.	1656.	1656.	1656.	1656.	1656.
DIVIDENDS	83.	83.	83.	83.	83.	83.	83.
RETAINED EARNINGS	1573.	1573.	1573.	1573.	1573.	1573.	1573.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - INCREMENTAL CASE (2.439.360 T/Y, C.U.:80%) - (USD. 1.000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
SOURCE OF FUNDS										
CASH GENERATED FROM OPERATION	2445.	3687.	2216.	2185.	2154.	2124.	2093.	2014.	2014.	2014.
PROFIT AFT. TAX. BFR INT.	0.	0.	2216.	2185.	2154.	2124.	2093.	2014.	2014.	2014.
DEPRECIATION AND AMORTIZATION	0.	0.	1736.	1705.	1675.	1644.	1614.	1656.	1656.	1656.
FINANCIAL RESOURCES	2445.	3687.	0.	480.	480.	480.	480.	358.	358.	358.
SHARE CAPITAL	1222.	1634.	0.	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	1222.	1634.	0.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS										
FIXED-CAPITAL EXPENDITURE	2392.	3533.	1953.	987.	913.	839.	765.	83.	83.	83.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	2392.	3533.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	-3.	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES										
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	993.	917.	840.	764.	688.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	611.	611.	611.	611.	611.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	382.	306.	229.	153.	76.	0.	0.	0.
DIVIDENDS	0.	0.	68.	70.	72.	75.	77.	83.	83.	83.
CASH INCREASE OR (DECREASE)										
BEGINNING CASH BALANCE	53.	80.	1158.	1198.	1242.	1285.	1329.	1931.	1931.	1931.
ENDING CASH BALANCE	0.	53.	139.	1290.	2488.	3730.	5015.	6344.	8276.	10207.
	53.	139.	1290.	2488.	3730.	5015.	6344.	8276.	10207.	12138.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***

FUNDS FLOW STATEMENTS

- INCREMENTAL CASE (2.439.360 T/Y, C.U.:80%) - (USD, 1.000)

SOURCE OF FUNDS	2007		2008		2009		2010		2011		2012		2013		2014	
	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.	2014.
CASH GENERATED FROM OPERATION	1656.	358.	1656.	358.	1656.	358.	1656.	358.	1656.	358.	1656.	358.	1656.	358.	1656.	358.
PROFIT AFT. TAX, BFR INT.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FINANCIAL RESOURCES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.	83.
CASH INCREASE OR (DECREASE)	12138.	14069.	16001.	17932.	19863.	21795.	23726.	25657.	27588.	29520.	31451.	33382.	35313.	37244.	39175.	41106.
BEGINNING CASH BALANCE	14069.	16001.	17932.	19863.	21795.	23726.	25657.	27588.	29520.	31451.	33382.	35313.	37244.	39175.	41106.	43037.
ENDING CASH BALANCE	14069.	16001.	17932.	19863.	21795.	23726.	25657.	27588.	29520.	31451.	33382.	35313.	37244.	39175.	41106.	43037.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***

BALANCE SHEET

- INCREMENTAL CASE (2,439,360 T/Y, C.U.:80%) - (USD, 1,000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
ASSETS										
CURRENT ASSETS										
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	53.	133.	1290.	2468.	3730.	5015.	6344.	8276.	10207.	12138.
NET FIXED ASSETS	2392.	5980.	5500.	5020.	4540.	4061.	3581.	3223.	2865.	2507.
INVESTMENT	2392.	5980.	5980.	5980.	5980.	5980.	5980.	5980.	5980.	5980.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	2256.	5640.	5640.	5640.	5640.	5640.	5640.	5640.	5640.	5640.
AMORTIZATION	136.	340.	340.	340.	340.	340.	340.	340.	340.	340.
LESS: ACC. DEPRECIATION	0.	0.	480.	960.	1439.	1919.	2399.	2767.	3115.	3473.
LIABILITIES	1222.	3056.	2448.	1837.	1225.	614.	3.	3.	3.	3.
CURRENT LIABILITIES	0.	611.	614.	614.	614.	614.	3.	3.	3.	3.
ACCOUNT PAYABLE	0.	0.	3.	3.	3.	3.	3.	3.	3.	3.
CURRENT PORTION OF M/T DEBT	0.	611.	611.	611.	611.	611.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	1222.	2445.	1834.	1222.	611.	-0.	-0.	-0.	-0.	-0.
MIDDLE TERM DEBT BALANCE	1222.	2445.	1834.	1222.	611.	-0.	-0.	-0.	-0.	-0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	1222.	3056.	4342.	5672.	7045.	8462.	9922.	11495.	13069.	14642.
SHARE CAPITAL	1222.	3056.	3056.	3056.	3056.	3056.	3056.	3056.	3056.	3056.
ACC. RETAINED EARNINGS	0.	0.	1286.	2616.	3989.	5406.	6866.	8439.	10012.	11586.
LIABILITIES & S/H EQUITY	2445.	6112.	6790.	7509.	8271.	9076.	9925.	11498.	13072.	14645.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 BALANCE SHEET
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:80%) - (USD, 1,000)

YEAR	2007	2008	2009	2010	2011	2012	2013
ASSETS	16218.	17791.	19364.	20938.	22511.	24084.	25657.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	14069.	16001.	17932.	19663.	21795.	23726.	25657.
NET FIXED ASSETS	2149.	1790.	1432.	1074.	716.	358.	0.
INVESTMENT	5980.	5980.	5980.	5980.	5980.	5980.	5980.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	5640.	5640.	5640.	5640.	5640.	5640.	5640.
AMORTIZATION	340.	340.	340.	340.	340.	340.	340.
LESS: ACC. DEPRECIATION	3831.	4189.	4548.	4906.	5264.	5622.	5980.
LIABILITIES	3.	3.	3.	3.	3.	3.	3.
CURRENT LIABILITIES	3.	3.	3.	3.	3.	3.	3.
ACCOUNT PAYABLE	3.	3.	3.	3.	3.	3.	3.
CURRENT PORTION OF M/T DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	-0.	-0.	-0.	-0.	-0.	-0.	-0.
MIDDLE TERM DEBT BALANCE	-0.	-0.	-0.	-0.	-0.	-0.	-0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	16215.	17788.	19362.	20935.	22509.	24081.	25654.
SHARE CAPITAL	3056.	3056.	3056.	3056.	3056.	3056.	3056.
ACC. RETAINED EARNINGS	13159.	14732.	16305.	17879.	19452.	21025.	22598.
LIABILITIES & S/H EQUITY	16218.	17791.	19364.	20938.	22511.	24084.	25657.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 PROFITABILITY AND FINANCIAL INDICATORS
 - INCREMENTAL CASE (2.439.360 T/Y, C.U.:50%) - (USD. 1.000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- INVESTMENT (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT (PCT)	(4) AFT TAX PROFIT -TO- CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
1999	42.4	31.2	37.7	44.3	0.0	0.0	2.23	30 / 70	*****	-366.0	26.4
2000	43.6	24.7	39.0	45.8	0.0	0.0	2.36	18 / 82	*****	-341.8	26.5
2001	45.2	20.5	40.9	47.3	0.0	0.0	2.56	8 / 92	*****	-317.7	24.6
2002	46.7	17.6	41.6	48.8	0.0	0.0	2.78	-0 / 100	*****	-293.6	22.6
2003	48.1	15.5	42.8	50.3	0.0	0.0	3.04	-0 / 100	*****	-269.5	20.7
2004	51.8	14.4	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2005	51.8	12.7	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2006	51.8	11.3	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2007	51.8	10.2	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2008	51.8	9.3	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2009	51.8	8.6	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2010	51.8	7.9	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2011	51.8	7.4	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2012	51.8	6.9	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
2013	51.8	6.5	46.2	54.2	0.0	0.0	*****	-0 / 100	*****	-24.8	1.1
AVERAGE1	49.6	13.6	44.2	51.9	0.0	0.0	*****	4 / 96	*****	-122.4	6.9
AVERAGE2	49.6	10.6	40.4	47.5	0.0	0.0	7.36	3 / 87	*****		

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS (SIMPLE AVERAGE)
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE (WEIGHTED AVERAGE)

* NOTE FOR (9) (10) (11)

WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

*** CRUDE OIL DISTILLATION PROJECT IN POLAND ***
 RETURN ON INVESTMENT (IN '94 FIXED PRICE)
 - INCREMENTAL CASE (2,439,360 T/Y, C.U.:80X) - (USD. 1,000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN (1) WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATN	(2) CASH IN-FLOW	(3) INCOME TAX	(4) BFR-TAX NET IN-FLOW (2)-(1)	(5) AFT-TAX NET IN-FLOW (4)-(3)
1997	2256.	0.	2256.	0.	0.	0.	0.	-2256.	-2256.
1998	3384.	0.	3384.	0.	0.	0.	0.	-3384.	-3384.
1999	0.	-3.	-3.	2638.	480.	3118.	903.	3121.	2219.
2000	0.	0.	0.	2638.	480.	3118.	933.	3118.	2185.
2001	0.	0.	0.	2638.	480.	3118.	964.	3118.	2154.
2002	0.	0.	0.	2638.	480.	3118.	994.	3118.	2124.
2003	0.	0.	0.	2638.	480.	3118.	1025.	3118.	2093.
2004	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2005	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2006	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2007	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2008	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2009	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2010	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2011	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2012	0.	0.	0.	2760.	358.	3118.	1104.	3118.	2014.
2013	0.	3.	3.	2760.	358.	3118.	1104.	3115.	2011.
	5640.	0.	5640.	40792.	5930.	46772.	16859.	41132.	26274.

INTERNAL RATE OF RETURN
 ON (4) BFR-TAX NET IN-FLOW (2)-(1) 46.48 PER CENT
 ON (5) AFT-TAX NET IN-FLOW (4)-(3) 32.99 PER CENT

*** PFSA POWER PLANT PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) -
 (USD 1000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
PRODUCTION (HP STEAM)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FOR BP	0.	0.	-555.	-555.	-555.	-555.	-555.	-555.	-555.	-555.
PURE WATER	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FUEL	0.	0.	-555.	-555.	-555.	-555.	-555.	-555.	-555.	-555.
FOR WT	0.	0.	-843.	-843.	-843.	-843.	-843.	-843.	-843.	-843.
RAW WATER	0.	0.	-16.	-16.	-16.	-16.	-16.	-16.	-16.	-16.
HCL	0.	0.	-197.	-197.	-197.	-197.	-197.	-197.	-197.	-197.
NAOH	0.	0.	-630.	-630.	-630.	-630.	-630.	-630.	-630.	-630.
FOR G	0.	0.	-13879.	-13879.	-13879.	-13879.	-13879.	-13879.	-13879.	-13879.
HP STEAM	0.	0.	11861.	11861.	11861.	11861.	11861.	11861.	11861.	11861.
ELECTRICITY	0.	0.	-25740.	-25740.	-25740.	-25740.	-25740.	-25740.	-25740.	-25740.
VARIABLE COST	0.	0.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH FACTORY COST	0.	0.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
CASH FACTORY COST	0.	0.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
DEPRECIABLE ASSETS	0.	0.	2151.	2151.	2151.	2151.	2151.	2151.	2151.	2151.
DEPRECIABLE ASSETS	0.	0.	2151.	2151.	2151.	2151.	2151.	2151.	2151.	2151.
PRE-OPERATIONAL EXPENSES	0.	0.	323.	323.	323.	323.	323.	323.	323.	323.
PRE-OPERATIONAL EXPENSES	0.	0.	323.	323.	323.	323.	323.	323.	323.	323.
INTEREST ORG CONST.	0.	0.	408.	408.	408.	408.	408.	408.	408.	408.
INTEREST ORG CONST.	0.	0.	408.	408.	408.	408.	408.	408.	408.	408.
DEPRECIATION AND AMORTIZATION	0.	0.	2882.	2882.	2882.	2882.	2882.	2882.	2882.	2882.
DEPRECIATION AND AMORTIZATION	0.	0.	2882.	2882.	2882.	2882.	2882.	2882.	2882.	2882.
TOTAL FACTORY COST	0.0	0.0	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.
TOTAL FACTORY COST	0.0	0.0	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.	-12394.
UNIT FACTORY COST	0.0	0.0	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913
UNIT FACTORY COST	0.0	0.0	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913	-1.0913
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	362.	431.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	362.	431.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	362.	431.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	362.	431.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	0.0	0.0	-10240.	-10671.	-11101.	-11532.	-11963.	-13125.	-13125.	-13125.
TOTAL PRODUCTION COST	0.0	0.0	-10240.	-10671.	-11101.	-11532.	-11963.	-13125.	-13125.	-13125.
UNIT PRODUCTION COST	0.0	0.0	-0.9016	-0.9395	-0.9775	-1.0154	-1.0534	-1.1557	-1.1557	-1.1557
UNIT PRODUCTION COST	0.0	0.0	-0.9016	-0.9395	-0.9775	-1.0154	-1.0534	-1.1557	-1.1557	-1.1557

*** PPSA POWER PLANT PROJECT IN POLAND ***
 PRODUCTION COST STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	2007	2008	2009	2010	2011	2012	2013
PRODUCTION (HP STEAM)	0.	0.	0.	0.	0.	0.	0.
FOR BP	-555.	-555.	-555.	-555.	-555.	-555.	-555.
PURE WATER	0.	0.	0.	0.	0.	0.	0.
FUEL	-555.	-555.	-555.	-555.	-555.	-555.	-555.
FOR WT	-843.	-843.	-843.	-843.	-843.	-843.	-843.
RAW WATER	-16.	-16.	-16.	-16.	-16.	-16.	-16.
HCL	-197.	-197.	-197.	-197.	-197.	-197.	-197.
NAOH	-630.	-630.	-630.	-630.	-630.	-630.	-630.
FOR G	-13879.	-13879.	-13879.	-13879.	-13879.	-13879.	-13879.
HP STEAM	11861.	11861.	11861.	11861.	11861.	11861.	11861.
ELECTRICITY	-25740.	-25740.	-25740.	-25740.	-25740.	-25740.	-25740.
VARIABLE COST	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.
EMPLOYMENT COST	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.
MAINTENANCE COST	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.
OVERHEAD COST	0.	0.	0.	0.	0.	0.	0.
INSURANCE COST	0.	0.	0.	0.	0.	0.	0.
LAND LEASE COST	0.	0.	0.	0.	0.	0.	0.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.
CASH FACTORY COST	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
DEPRECIABLE ASSETS	2151.	2151.	2151.	2151.	2151.	2151.	2151.
DEPRECIABLE ASSETS	2151.	2151.	2151.	2151.	2151.	2151.	2151.
PRE-OPERATIONAL EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST DRG CONST.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	2151.	2151.	2151.	2151.	2151.	2151.	2151.
TOTAL FACTORY COST	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.
UNIT FACTORY COST	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.
OTHER EXPENSES	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
TOTAL PRODUCTION COST	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.
UNIT PRODUCTION COST	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557	-1.1557

*** PPSA POWER PLANT PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) -
 (USD 1000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	0.	0.	-69.	-69.	-69.	-69.	-69.	-69.	-69.	-69.
ACCOUNT PAYABLE	0.	0.	-69.	-69.	-69.	-69.	-69.	-69.	-69.	-69.
CHEMICALS	0.	0.	-69.	-69.	-69.	-69.	-69.	-69.	-69.	-69.
OTHERS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERMANENT WORKING CAPITAL	0.	0.	69.	69.	69.	69.	69.	69.	69.	69.
CHANGE IN WORKING CAPITAL	0.	0.	69.	0.	0.	0.	0.	0.	0.	0.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 WORKING CAPITAL STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	2007	2008	2009	2010	2011	2012	2013
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.
PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
MATERIAL INVENTORY	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.
CURRENT LIABILITIES W/O DEBT	-69.	-69.	-69.	-69.	-69.	-69.	-69.
ACCOUNT PAYABLE	-69.	-69.	-69.	-69.	-69.	-69.	-69.
CHEMICALS	-69.	-69.	-69.	-69.	-69.	-69.	-69.
OTHERS	0.	0.	0.	0.	0.	0.	0.
PERMANENT WORKING CAPITAL	69.	69.	69.	69.	69.	69.	69.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 INCOME STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2005
OPERATING INCOME	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TOTAL SALES REVENUE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
COST OF SALES	0.	0.	-12394.	-12394.	-12394.	-12394.	-12394.	-13125.	-13125.	-13125.
VARIABLE COST	0.	0.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	0.	0.	2882.	2882.	2882.	2882.	2882.	2151.	2151.	2151.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	0.	0.	12394.	12394.	12394.	12394.	12394.	13125.	13125.	13125.
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADM. EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OPERATING PROFIT	0.	0.	12394.	12394.	12394.	12394.	12394.	13125.	13125.	13125.
NON-OPERATING EXPENSES	0.	0.	2155.	1724.	1293.	862.	431.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	862.	431.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	0.	0.	10240.	10671.	11101.	11532.	11963.	13125.	13125.	13125.
INCOME TAX	0.	0.	4096.	4268.	4441.	4613.	4785.	5250.	5250.	5250.
NET PROFIT OR (LOSS) AFTER TAX	0.	0.	6144.	6402.	6661.	6919.	7178.	7875.	7875.	7875.
DIVIDENDS	0.	0.	387.	320.	333.	346.	359.	394.	394.	394.
RETAINED EARNINGS	0.	0.	5837.	6082.	6328.	6573.	6819.	7481.	7481.	7481.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 INCOME STATEMENTS
 - INCREMENTAL CASE (8P/WT/G) - (USD 1000)

YEAR	2007	2008	2009	2010	2011	2012	2013
OPERATING INCOME	0.	0.	0.	0.	0.	0.	0.
TOTAL SALES REVENUE	0.	0.	0.	0.	0.	0.	0.
COST OF SALES	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.	-13125.
VARIABLE COST	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.	-15276.
DIRECT FIXED COST	0.	0.	0.	0.	0.	0.	0.
DEPRECIATION AND AMORTIZATION	2151.	2151.	2151.	2151.	2151.	2151.	2151.
INC. IN PRODUCT INVENTORY	0.	0.	0.	0.	0.	0.	0.
GROSS PROFIT ON SALES	13125.	13125.	13125.	13125.	13125.	13125.	13125.
SALES EXPENSES	0.	0.	0.	0.	0.	0.	0.
GENERAL & ADMI. EXPENSES	0.	0.	0.	0.	0.	0.	0.
OPERATING PROFIT	13125.	13125.	13125.	13125.	13125.	13125.	13125.
NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
OTHER NON-OPERATING EXPENSES	0.	0.	0.	0.	0.	0.	0.
NET PROFIT OR (LOSS) BEFORE TAX	13125.	13125.	13125.	13125.	13125.	13125.	13125.
INCOME TAX	5250.	5250.	5250.	5250.	5250.	5250.	5250.
NET PROFIT OR (LOSS) AFTER TAX	7875.	7875.	7875.	7875.	7875.	7875.	7875.
DIVIDENDS	394.	394.	394.	394.	394.	394.	394.
RETAINED EARNINGS	7481.	7481.	7481.	7481.	7481.	7481.	7481.

*** PSA POWER PLANT PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
SOURCE OF FUNDS										
CASH GENERATED FROM OPERATION	13790.	23685.	11181.	11008.	10836.	10663.	10491.	10026.	10026.	10026.
PROFIT AFT. TAX, BFR INT.	0.	0.	11181.	11008.	10636.	10663.	10491.	10026.	10026.	10026.
DEPRECIATION AND AMORTIZATION	0.	0.	3298.	8126.	7954.	7781.	7609.	7875.	7875.	7875.
FINANCIAL RESOURCES	13790.	20685.	0.	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	6895.	10342.	0.	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	6895.	10342.	0.	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS										
FIXED CAPITAL EXPENDITURE	14369.	21553.	5978.	5491.	5073.	4655.	4237.	394.	394.	394.
NON-DEPRECIABLE ASSETS	14369.	21553.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	13562.	20326.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	817.	1225.	0.	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	69.	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	5602.	5171.	4740.	4309.	3878.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	3447.	3447.	3447.	3447.	3447.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	2155.	1724.	1293.	862.	431.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	0.	0.	307.	320.	333.	346.	359.	394.	394.	394.
CASH INCREASE OR (DECREASE)	-579.	-868.	5202.	5517.	5763.	6006.	6254.	9633.	9633.	9633.
BEGINNING CASH BALANCE	0.	-579.	-1447.	3755.	9272.	19034.	21042.	27296.	36929.	46561.
ENDING CASH BALANCE	-579.	-1447.	3755.	9272.	15034.	21042.	27296.	36929.	46561.	56194.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 FUNDS FLOW STATEMENTS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	2007	2008	2009	2010	2011	2012	2013
SOURCE OF FUNDS	10026.	10026.	10026.	10026.	10026.	10026.	10026.
CASH GENERATED FROM OPERATION	10026.	10026.	10026.	10026.	10026.	10026.	10026.
PROFIT AFT. TAX. BFR INT.	7875.	7875.	7875.	7875.	7875.	7875.	7875.
DEPRECIATION AND AMORTIZATION	2151.	2151.	2151.	2151.	2151.	2151.	2151.
FINANCIAL RESOURCES	0.	0.	0.	0.	0.	0.	0.
SHARE CAPITAL	0.	0.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
USES OF FUNDS	394.	394.	394.	394.	394.	394.	394.
FIXED CAPITAL EXPENDITURE	0.	0.	0.	0.	0.	0.	0.
NON-DEPRECIABLE ASSETS	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE FIXED ASSETS	0.	0.	0.	0.	0.	0.	0.
INTEREST DURING CONSTRUCTION	0.	0.	0.	0.	0.	0.	0.
CHANGE IN WORKING CAPITAL	0.	0.	0.	0.	0.	0.	0.
DEBT SERVICES	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
REPAYMENT OF SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON MIDDLE TERM DEBT	0.	0.	0.	0.	0.	0.	0.
INTEREST ON SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.
DIVIDENDS	394.	394.	394.	394.	394.	394.	394.
CASH INCREASE OR (DECREASE)	9633.	9633.	9633.	9633.	9633.	9633.	9633.
BEGINNING CASH BALANCE	56194.	65826.	75459.	85091.	94724.	104356.	113989.
ENDING CASH BALANCE	65826.	75459.	85091.	94724.	104356.	113989.	123621.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 BALANCE SHEET
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
ASSETS	13790.	34474.	36795.	39429.	42310.	45436.	48807.	56289.	63770.	71252.
CURRENT ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CASH IN HAND	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACCOUNT RECEIVABLE	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
INVENTORIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ACC. EXCESS CASH	-579.	-1447.	3755.	9272.	15034.	21042.	27296.	36929.	46561.	56194.
NET FIXED ASSETS	14369.	35922.	33040.	30158.	27275.	24993.	21511.	19360.	17209.	15058.
INVESTMENT	14369.	35922.	35922.	35922.	35922.	35922.	35922.	35922.	35922.	35922.
NON-DEPR. ASSETS	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DEPRECIABLE ASSETS	13552.	33880.	33880.	33880.	33880.	33880.	33880.	33880.	33880.	33880.
AMORTIZATION	817.	2042.	2042.	2042.	2042.	2042.	2042.	2042.	2042.	2042.
LESS: ACC. DEPRECIATION	0.	0.	2882.	5764.	8546.	11529.	14411.	16562.	18713.	20864.
LIABILITIES	6895.	17237.	13721.	10273.	6826.	3379.	-69.	-69.	-69.	-69.
CURRENT LIABILITIES	0.	3447.	3379.	3379.	3379.	3379.	-69.	-69.	-69.	-69.
ACCOUNT PAYABLE	0.	0.	-69.	-69.	-69.	-69.	-69.	-69.	-69.	-69.
CURRENT PORTION OF M/T DEBT	0.	3447.	3447.	3447.	3447.	3447.	0.	0.	0.	0.
SHORT TERM DEBT	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FIXED LIABILITIES	6895.	13790.	10342.	6895.	3447.	0.	0.	0.	0.	0.
MIDDLE TERM DEBT BALANCE	6895.	13790.	10342.	6895.	3447.	0.	0.	0.	0.	0.
OTHER FIXED LIABILITIES	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
STOCK HOLDERS EQUITY	6895.	17237.	23074.	29156.	35484.	42037.	48876.	56356.	63839.	71320.
SHARE CAPITAL	6895.	17237.	17237.	17237.	17237.	17237.	17237.	17237.	17237.	17237.
ACC. RETAINED EARNINGS	0.	0.	5837.	11919.	18247.	24620.	31639.	39120.	46602.	54083.
LIABILITIES & S/H EQUITY	13790.	34474.	36795.	39429.	42310.	45436.	48807.	56289.	63770.	71252.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 BALANCE SHEET
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	2007	2008	2009	2010	2011	2012	2013
ASSETS	78733	86214	93696	101177	108658	116140	123621
CURRENT ASSETS	0	0	0	0	0	0	0
CASH IN HAND	0	0	0	0	0	0	0
ACCOUNT RECEIVABLE	0	0	0	0	0	0	0
INVENTORIES	0	0	0	0	0	0	0
ACC. EXCESS CASH	65626	75459	85091	94724	104356	113989	123621
NET FIXED ASSETS	12907	10756	3604	6453	4302	2151	0
INVESTMENT	35922	35922	35922	35922	35922	35922	35922
NON-DEPR. ASSETS	0	0	0	0	0	0	0
DEPRECIABLE ASSETS	33880	33880	33880	33880	33880	33880	33880
AMORTIZATION	2042	2042	2042	2042	2042	2042	2042
LESS: ACC. DEPRECIATION	23015	25166	27317	29468	31620	33771	35922
LIABILITIES	-69	-69	-69	-69	-69	-69	-69
CURRENT LIABILITIES	-69	-69	-69	-69	-69	-69	-69
ACCOUNT PAYABLE	-69	-69	-69	-69	-69	-69	-69
CURRENT PORTION OF M/T DEBT	0	0	0	0	0	0	0
SHORT TERM DEBT	0	0	0	0	0	0	0
FIXED LIABILITIES	0	0	0	0	0	0	0
MIDDLE TERM DEBT BALANCE	0	0	0	0	0	0	0
OTHER FIXED LIABILITIES	0	0	0	0	0	0	0
STOCK HOLDERS EQUITY	78802	86283	93765	101246	108727	116209	123690
SHARE CAPITAL	17237	17237	17237	17237	17237	17237	17237
ACC. RETAINED EARNINGS	61565	69046	76527	84009	91490	98972	106453
LIABILITIES & S/H EQUITY	78733	86214	93696	101177	108658	116140	123621

*** PSA POWER PLANT PROJECT IN POLAND ***
 PROFITABILITY AND FINANCIAL INDICATORS
 - INCREMENTAL CASE (BP/WT/G) - (USD 1000)

YEAR	(1) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(2) AFT TAX PROFIT -TO- SALES REV S/H EQUITY (PCT)	(3) BFR TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(4) AFT TAX PROFIT -TO- INVESTMENT S/CAPITAL (PCT)	(5) CURRENT RATIO	(6) QUICK RATIO	(7) DEBT SERVICE RATIO	(8) L/T DEBT -TO- S/H EQUITY	(9)* PROFIT B.E.P. CAPACITY UTILIZE (PCT)	(10)* CASH B.E.P. SALES PRICE (PRICE)	(11)* CASH B.E.P. CAPACITY UTILIZE (PCT)
AVERAGE1*****	11.3	30.6	38.2	*****	*****	*****	9 / 91	*****	*****	*****	
AVERAGE2*****	10.2	31.7	39.6	*****	0.0	6.52	4 / 96	*****	*****	*****	

(AVERAGE1) : SUM OF ANNUAL FIGURES OF PERCENTAGE AND RATIO IS DIVIDED BY NO. OF YEARS(SIMPLE AVERAGE)
 (AVERAGE2) : AVERAGE FIGURES ARE CALCULATED BY ACTUAL VALUES ACCUMULATED OVER THE PROJECT LIFE(WEIGHTED AVERAGE)

* NOTE FOR (9)(10)(11)
 WHEN THERE ARE TWO OR MORE PRODUCTS, AND DURING THE YEARS WHEN ALL OF PRODUCTS ARE NOT PRODUCED AT THE SAME RATE
 OF CAPACITY UTILIZATION, ABOVE BREAK-EVEN-POINTS CANNOT GIVE CORRECT FIGURES.

*** PPSA POWER PLANT PROJECT IN POLAND ***
 RETURN ON INVESTMENT (IN '94 FIXED PRICE)
 - INCREMENTAL CASE (8P/WT/G) - (USD 1000)

YEAR	FIXED CAPITAL EXPEND.	CHANGE IN WORKING CAPITAL	GROSS CAPITAL EXPENDTR	OPERATING PROFIT	DEPRECIATION	GROSS CASH IN-FLOW	INCOME TAX	BFR-TAX NET IN-FLOW	AFT-TAX NET IN-FLOW
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1997	13552.	0.	13552.	0.	0.	0.	0.	-13552.	-13552.
1998	20328.	0.	20328.	0.	0.	0.	0.	-20328.	-20328.
1999	0.	69.	69.	12394.	2882.	15276.	4096.	15207.	11112.
2000	0.	0.	0.	12394.	2882.	15276.	4268.	15276.	11008.
2001	0.	0.	0.	12394.	2882.	15276.	4441.	15276.	10836.
2002	0.	0.	0.	12394.	2882.	15276.	4613.	15276.	10663.
2003	0.	0.	0.	12394.	2882.	15276.	4785.	15276.	10491.
2004	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2005	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2006	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2007	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2008	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2009	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2010	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2011	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2012	0.	0.	0.	13125.	2151.	15276.	5250.	15276.	10026.
2013	-0.	-69.	-69.	13125.	2151.	15276.	5250.	15345.	10095.
	33880.	0.	33880.	193223.	35922.	229145.	74704.	195265.	120561.

INTERNAL RATE OF RETURN
 ON (4) BFR-TAX NET IN-FLOW (2)-(1) 36.71 PER CENT
 ON (5) AFT-TAX NET IN-FLOW (4)-(3) 27.59 PER CENT