

## **DATA IN BRIEF**

**Economic values and CO<sub>2</sub> simulation on the application of LPG for public fleets in Magelang, Indonesia: executive data to support the clean city program and alternative to offsetting online transportation**



**Presented by:**

Dr. Muji Setiyo, ST., MT

Ir. Eko Muh Widodo, MT

M. Imron Rosyidi, ST. M.Si

Tuessi Ari Purnomo, ST., M.Tech

Bayu Sindhu Rahardja, M.Sc

Drs. Suryantoro

**Universitas Muhammadiyah Magelang**

In collaboration with:

**Department of Transportation of Magelang City**

**Magelang, May 2018**

## Table of Content

TRANSACTION DATA .....	1
CONVERSION FINANCING SCENARIOS .....	2
BEP DISTANCE CALCULATION .....	2
NET PRESENT VALUE (NPV) CALCULATION (RON 88 TO LPG) .....	4
NET PRESENT VALUE (NPV) CALCULATION (RON 90 TO LPG) .....	8
INTERNAL RATE OF RETURN CALCULATION SCENARIO 1 .....	13
INTERNAL RATE OF RETURN CALCULATION SCENARIO 2 .....	14
INTERNAL RATE OF RETURN CALCULATION SCENARIO 3 .....	15
PAYBACK PERIOD CALCULATION FOR SCENARIO 1 .....	16
PAYBACK PERIOD CALCULATION FOR SCENARIO 2 .....	18
PAYBACK PERIOD CALCULATION FOR SCENARIO 3 .....	20

## TRANSACTION DATA

### Public Fleet data and specification

No	Component	Unit	Line												
			1	2	3	4	5	6	7	8	9	10	11	12	13*
1	Number of fleets registered	Unit	29	36	35	37	19	28	30	30	28	38	10	15	29
2	The number of fleets operates daily	Unit/day	27	33	32	35	17	25	28	28	25	35	8	13	25
3	Daly operation (average)	km/day	171	140	155	186	140	124	124	155	109	155	93	93	155
4	Year production	year	1998	1999	1999	2001	1998	1998	1996	1999	1996	2000	1998	1998	1996

### Operational cost data (x thousand)

No	Component	Unit	Line												
			1	2	3	4	5	6	7	8	9	10	11	12	13*
1	Vehicle tax cost	IDR/year	200	200	200	200	200	200	200	200	200	200	200	200	200
2	Organization fee	IDR/year	36	36	36	36	36	36	36	36	36	36	36	36	36
3	Vehicle inspection costs	IDR/year	80	80	80	80	80	80	80	80	80	80	80	80	80
4	Fuel cost (gasoline)	IDR/day	110	90	100	120	90	80	80	100	70	100	60	60	100
5	Oil maintenance Cost	IDR/year	1992	1630	1811	2173	1630	1449	1449	1811	1268	1811	1087	1087	1811
6	Cleaning and washing cost	IDR/year	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650

### Daily transaction (x thousand)

No	Component	Unit	Line												
			1	2	3	4	5	6	7	8	9	10	11	12	13*
1	Daily gross transaction	IDR/day	160	150	150	160	110	110	110	140	100	160	90	80	110
2	Deposit	IDR/day	90	80	80	90	60	60	60	80	50	90	50	40	60
3	Driver's wages	IDR/day	70	70	70	70	50	50	50	60	50	70	40	40	50

\* Line 13 is the buffer line of Magelang-Borobudur (temple tourist area)

## CONVERSION FINANCING SCENARIOS

Cost type Scenario	Conversion cost	Engine standardization cost	Annual tax and inspection cost
Scenario 1	Government	Car owner	Government
Scenario 2	Government	Car owner	Car owner
Scenario 3	Car owner	Car owner	Government

## BEP DISTANCE CALCULATION

Distance traveled (x1000 km)	Running Costs (million)			Saving to RON 88 (million)	Saving to RON 90 (million)
	Using Gasoline RON 88	Using Gasoline RON 90	Using LPG		
0	-	-	15	(15)	(15)
10	8	9	22	(13)	(12)
20	16	19	28	(12)	(9)
30	24	28	35	(10)	(6)
40	33	38	42	(9)	(4)
50	41	47	48	(7)	(1)
60	49	57	55	(6)	2
70	57	66	62	(4)	5
80	65	76	68	(3)	8
90	73	85	75	(1)	11
100	81	95	81	0	14
110	90	104	88	2	16
120	98	114	95	3	19
130	106	123	101	5	22
140	114	133	108	6	25
150	122	142	115	8	28
160	130	152	121	9	31
170	139	161	128	11	34
180	147	171	135	12	36
190	155	180	141	14	39
200	163	190	148	15	42
210	171	199	155	17	45
220	179	209	161	18	48
230	187	218	168	20	51
240	196	228	174	21	53
250	204	237	181	23	56

Net monthly cash inflow (IDR)	LPG to RON 88	LPG to RON 90
Scenario 1	632,874	1,200,942
Scenario 2	606,540	1,174,608
Scenario 3	632,874	1,200,942

## NET PRESENT VALUE (NPV) CALCULATION (RON 88 TO LPG)

Bank Loan, P (scenario 1) (IDR)		5,000,000	(engine standardisation cost)					
Bank Loan, P (scenario 2) (IDR)		5,000,000	(engine standardisation cost)					
Bank Loan, P (scenario 3) (IDR)		15,000,000	(Cost for engine standardisation + Converter kits)					
Interest rates, i, %		1.00%						
Total installment, n		60	month					
Installment		MONTHLY						
Net monthly cash inflow (scenario 1)		632,874	(IDR)					
Net monthly cash inflow (scenario 2)		606,540	(IDR)					
Net monthly cash inflow (scenario 3)		632,874	(IDR)					
Salvage value (S)		-						
R -C ( $\pi$ ) (IDR)					NPV LPG to RON 88 (Million, IDR)			
MONTH	Sc 1	Sc 2	Sc 3	DF of $\pi$	DF of S	Sc 1 (RON 88)	Sc 2 (RON 88)	Sc 3 (RON 88)
				(IDR)	(IDR)			
1	632,874	606,540	632,874	0.99	1.01	(4.37)	(4.40)	(14.37)

2	632,874	606,540	632,874	1.97	1.02	(3.75)	(3.80)	(13.75)
3	632,874	606,540	632,874	2.94	1.03	(3.14)	(3.22)	(13.14)
4	632,874	606,540	632,874	3.90	1.04	(2.53)	(2.63)	(12.53)
5	632,874	606,540	632,874	4.85	1.05	(1.93)	(2.06)	(11.93)
6	632,874	606,540	632,874	5.80	1.06	(1.33)	(1.48)	(11.33)
7	632,874	606,540	632,874	6.73	1.07	(0.74)	(0.92)	(10.74)
8	632,874	606,540	632,874	7.65	1.08	(0.16)	(0.36)	(10.16)
9	632,874	606,540	632,874	8.57	1.09	0.42	0.20	(9.58)
10	632,874	606,540	632,874	9.47	1.10	0.99	0.74	(9.01)
11	632,874	606,540	632,874	10.37	1.12	1.56	1.29	(8.44)
12	632,874	606,540	632,874	11.26	1.13	2.12	1.83	(7.88)
13	632,874	606,540	632,874	12.13	1.14	2.68	2.36	(7.32)
14	632,874	606,540	632,874	13.00	1.15	3.23	2.89	(6.77)
15	632,874	606,540	632,874	13.87	1.16	3.77	3.41	(6.23)
16	632,874	606,540	632,874	14.72	1.17	4.31	3.93	(5.69)
17	632,874	606,540	632,874	15.56	1.18	4.85	4.44	(5.15)
18	632,874	606,540	632,874	16.40	1.20	5.38	4.95	(4.62)

19	632,874	606,540	632,874	17.23	1.21	5.90	5.45	(4.10)
20	632,874	606,540	632,874	18.05	1.22	6.42	5.95	(3.58)
21	632,874	606,540	632,874	18.86	1.23	6.93	6.44	(3.07)
22	632,874	606,540	632,874	19.66	1.24	7.44	6.92	(2.56)
23	632,874	606,540	632,874	20.46	1.26	7.95	7.41	(2.05)
24	632,874	606,540	632,874	21.24	1.27	8.44	7.88	(1.56)
25	632,874	606,540	632,874	22.02	1.28	8.94	8.36	(1.06)
26	632,874	606,540	632,874	22.80	1.30	9.43	8.83	(0.57)
27	632,874	606,540	632,874	23.56	1.31	9.91	9.29	(0.09)
28	632,874	606,540	632,874	24.32	1.32	10.39	9.75	0.39
29	632,874	606,540	632,874	25.07	1.33	10.86	10.20	0.86
30	632,874	606,540	632,874	25.81	1.35	11.33	10.65	1.33
31	632,874	606,540	632,874	26.54	1.36	11.80	11.10	1.80
32	632,874	606,540	632,874	27.27	1.37	12.26	11.54	2.26
33	632,874	606,540	632,874	27.99	1.39	12.71	11.98	2.71
34	632,874	606,540	632,874	28.70	1.40	13.17	12.41	3.17
35	632,874	606,540	632,874	29.41	1.42	13.61	12.84	3.61



36	632,874	606,540	632,874	30.11	1.43	14.05	13.26	4.05
37	632,874	606,540	632,874	30.80	1.45	14.49	13.68	4.49
38	632,874	606,540	632,874	31.48	1.46	14.93	14.10	4.93
39	632,874	606,540	632,874	32.16	1.47	15.36	14.51	5.36
40	632,874	606,540	632,874	32.83	1.49	15.78	14.92	5.78
41	632,874	606,540	632,874	33.50	1.50	16.20	15.32	6.20
42	632,874	606,540	632,874	34.16	1.52	16.62	15.72	6.62
43	632,874	606,540	632,874	34.81	1.53	17.03	16.11	7.03
44	632,874	606,540	632,874	35.46	1.55	17.44	16.51	7.44
45	632,874	606,540	632,874	36.09	1.56	17.84	16.89	7.84
46	632,874	606,540	632,874	36.73	1.58	18.24	17.28	8.24
47	632,874	606,540	632,874	37.35	1.60	18.64	17.66	8.64
48	632,874	606,540	632,874	37.97	1.61	19.03	18.03	9.03
49	632,874	606,540	632,874	38.59	1.63	19.42	18.41	9.42
50	632,874	606,540	632,874	39.20	1.64	19.81	18.77	9.81
51	632,874	606,540	632,874	39.80	1.66	20.19	19.14	10.19
52	632,874	606,540	632,874	40.39	1.68	20.56	19.50	10.56

53	632,874	606,540	632,874	40.98	1.69	20.94	19.86	10.94
54	632,874	606,540	632,874	41.57	1.71	21.31	20.21	11.31
55	632,874	606,540	632,874	42.15	1.73	21.67	20.56	11.67
56	632,874	606,540	632,874	42.72	1.75	22.04	20.91	12.04
57	632,874	606,540	632,874	43.29	1.76	22.40	21.26	12.40
58	632,874	606,540	632,874	43.85	1.78	22.75	21.60	12.75
59	632,874	606,540	632,874	44.40	1.80	23.10	21.93	13.10
60	632,874	606,540	632,874	44.96	1.82	23.45	22.27	13.45

### NET PRESENT VALUE (NPV) CALCULATION (RON 90 TO LPG)

Bank Loan, P (scenario 1) (IDR)	5,000,000	(Engine standardisation cost)			
Bank Loan, P (scenario 2) (IDR)	5,000,000	(engine standardisation cost)			
Bank Loan, P (scenario 3) (IDR)	15,000,000	(Cost for engine standardisation + Converter kits)			
Interest rates, i, %	1.00%				
Total installment, n	60	month			
Installment	MONTHLY				

Net monthly cash inflow (scenario 1)				1,200,942	(IDR)			
Net monthly cash inflow (scenario 2)				1,174,608	(IDR)			
Net monthly cash inflow (scenario 3)				1,200,942	(IDR)			
Salvage value (S)				-				
R - C ( $\pi$ ) (IDR)						NPV LPG to RON 90 (Million, IDR)		
MONTH	Scce 1	Scce 2	Scce 3	DF of $\pi$ (IDR)	DF of S (IDR)	Scce 1 (RON 90)	Scce 2 (RON 90)	Scce 3 (RON 90)
1	1,200,942	1,174,608	1,200,942	0.99	1.01	(3.81)	(3.84)	(13.81)
2	1,200,942	1,174,608	1,200,942	1.97	1.02	(2.63)	(2.69)	(12.63)
3	1,200,942	1,174,608	1,200,942	2.94	1.03	(1.47)	(1.55)	(11.47)
4	1,200,942	1,174,608	1,200,942	3.90	1.04	(0.31)	(0.42)	(10.31)
5	1,200,942	1,174,608	1,200,942	4.85	1.05	0.83	0.70	(9.17)
6	1,200,942	1,174,608	1,200,942	5.80	1.06	1.96	1.81	(8.04)
7	1,200,942	1,174,608	1,200,942	6.73	1.07	3.08	2.90	(6.92)
8	1,200,942	1,174,608	1,200,942	7.65	1.08	4.19	3.99	(5.81)
9	1,200,942	1,174,608	1,200,942	8.57	1.09	5.29	5.06	(4.71)

10	1,200,942	1,174,608	1,200,942	9.47	1.10	6.37	6.13	(3.63)
11	1,200,942	1,174,608	1,200,942	10.37	1.12	7.45	7.18	(2.55)
12	1,200,942	1,174,608	1,200,942	11.26	1.13	8.52	8.22	(1.48)
13	1,200,942	1,174,608	1,200,942	12.13	1.14	9.57	9.25	(0.43)
14	1,200,942	1,174,608	1,200,942	13.00	1.15	10.62	10.27	0.62
15	1,200,942	1,174,608	1,200,942	13.87	1.16	11.65	11.29	1.65
16	1,200,942	1,174,608	1,200,942	14.72	1.17	12.68	12.29	2.68
17	1,200,942	1,174,608	1,200,942	15.56	1.18	13.69	13.28	3.69
18	1,200,942	1,174,608	1,200,942	16.40	1.20	14.69	14.26	4.69
19	1,200,942	1,174,608	1,200,942	17.23	1.21	15.69	15.23	5.69
20	1,200,942	1,174,608	1,200,942	18.05	1.22	16.67	16.20	6.67
21	1,200,942	1,174,608	1,200,942	18.86	1.23	17.65	17.15	7.65
22	1,200,942	1,174,608	1,200,942	19.66	1.24	18.61	18.09	8.61
23	1,200,942	1,174,608	1,200,942	20.46	1.26	19.57	19.03	9.57
24	1,200,942	1,174,608	1,200,942	21.24	1.27	20.51	19.95	10.51
25	1,200,942	1,174,608	1,200,942	22.02	1.28	21.45	20.87	11.45
26	1,200,942	1,174,608	1,200,942	22.80	1.30	22.38	21.78	12.38

27	1,200,942	1,174,608	1,200,942	23.56	1.31	23.29	22.67	13.29
28	1,200,942	1,174,608	1,200,942	24.32	1.32	24.20	23.56	14.20
29	1,200,942	1,174,608	1,200,942	25.07	1.33	25.10	24.44	15.10
30	1,200,942	1,174,608	1,200,942	25.81	1.35	25.99	25.31	15.99
31	1,200,942	1,174,608	1,200,942	26.54	1.36	26.88	26.18	16.88
32	1,200,942	1,174,608	1,200,942	27.27	1.37	27.75	27.03	17.75
33	1,200,942	1,174,608	1,200,942	27.99	1.39	28.61	27.88	18.61
34	1,200,942	1,174,608	1,200,942	28.70	1.40	29.47	28.71	19.47
35	1,200,942	1,174,608	1,200,942	29.41	1.42	30.32	29.54	20.32
36	1,200,942	1,174,608	1,200,942	30.11	1.43	31.16	30.36	21.16
37	1,200,942	1,174,608	1,200,942	30.80	1.45	31.99	31.18	21.99
38	1,200,942	1,174,608	1,200,942	31.48	1.46	32.81	31.98	22.81
39	1,200,942	1,174,608	1,200,942	32.16	1.47	33.63	32.78	23.63
40	1,200,942	1,174,608	1,200,942	32.83	1.49	34.43	33.57	24.43
41	1,200,942	1,174,608	1,200,942	33.50	1.50	35.23	34.35	25.23
42	1,200,942	1,174,608	1,200,942	34.16	1.52	36.02	35.12	26.02
43	1,200,942	1,174,608	1,200,942	34.81	1.53	36.80	35.89	26.80

44	1,200,942	1,174,608	1,200,942	35.46	1.55	37.58	36.65	27.58
45	1,200,942	1,174,608	1,200,942	36.09	1.56	38.35	37.40	28.35
46	1,200,942	1,174,608	1,200,942	36.73	1.58	39.11	38.14	29.11
47	1,200,942	1,174,608	1,200,942	37.35	1.60	39.86	38.88	29.86
48	1,200,942	1,174,608	1,200,942	37.97	1.61	40.60	39.60	30.60
49	1,200,942	1,174,608	1,200,942	38.59	1.63	41.34	40.33	31.34
50	1,200,942	1,174,608	1,200,942	39.20	1.64	42.07	41.04	32.07
51	1,200,942	1,174,608	1,200,942	39.80	1.66	42.80	41.75	32.80
52	1,200,942	1,174,608	1,200,942	40.39	1.68	43.51	42.45	33.51
53	1,200,942	1,174,608	1,200,942	40.98	1.69	44.22	43.14	34.22
54	1,200,942	1,174,608	1,200,942	41.57	1.71	44.92	43.83	34.92
55	1,200,942	1,174,608	1,200,942	42.15	1.73	45.62	44.51	35.62
56	1,200,942	1,174,608	1,200,942	42.72	1.75	46.30	45.18	36.30
57	1,200,942	1,174,608	1,200,942	43.29	1.76	46.99	45.85	36.99
58	1,200,942	1,174,608	1,200,942	43.85	1.78	47.66	46.50	37.66
59	1,200,942	1,174,608	1,200,942	44.40	1.80	48.33	47.16	38.33
60	1,200,942	1,174,608	1,200,942	44.96	1.82	48.99	47.80	38.99

## INTERNAL RATE OF RETURN CALCULATION SCENARIO 1

Bank Loan, P (scenario 1) (IDR)	5,000,000	(engine standardisation cost)
Total installment, n	60	month
Installment	MONTHLY	
Net monthly cash inflow (IDR)	632,874	(Compared to RON 88)
Net monthly cash inflow (IDR)	1,200,942	(Compared to RON 90)
Salvage value (S)	-	

INTEREST RATE	x 1 million, IDR	
	IRR to RON 88 (Sec 1)	IRR to RON 90 (Sec 1)
1%	23.45	48.99
2%	17.00	36.75
3%	12.52	28.24
4%	9.32	22.17
5%	6.98	17.73
6%	5.23	14.41
7%	3.89	11.86
8%	2.83	9.86
9%	1.99	8.27
10%	1.31	6.97
11%	0.74	5.90
12%	0.27	5.00
13%	(0.13)	4.23
14%	(0.48)	3.57
15%	(0.78)	3.00
16%	(1.05)	2.50
17%	(1.28)	2.06
18%	(1.48)	1.67
19%	(1.67)	1.32
20%	(1.84)	1.00
21%	(1.99)	0.72
22%	(2.12)	0.46
23%	(2.25)	0.22
24%	(2.36)	0.00
25%	(2.47)	(0.20)
26%	(2.57)	(0.38)
27%	(2.66)	(0.55)
28%	(2.74)	(0.71)
29%	(2.82)	(0.86)
30%	(2.89)	(1.00)

## INTERNAL RATE OF RETURN CALCULATION SCENARIO 2

Bank Loan, P (scenario 2) (IDR)	5,000,000	(engine standardisation cost)
Total installment, n	60	month
Installment	MONTHLY	
Net monthly cash inflow (IDR)	606,540	(Compared to RON 88)
Net monthly cash inflow (IDR)	1,174,608	(Compared to RON 90)
Salvage value (S)	-	

INTEREST RATE	x 1 million, IDR	
	IRR to RON 88 (Sce 2)	IRR to RON 90 (Sce 2)
1%	22.27	47.80
2%	16.08	35.83
3%	11.79	27.51
4%	8.72	21.57
5%	6.48	17.23
6%	4.80	13.98
7%	3.52	11.49
8%	2.51	9.54
9%	1.70	7.98
10%	1.05	6.71
11%	0.50	5.66
12%	0.05	4.78
13%	(0.34)	4.03
14%	(0.67)	3.39
15%	(0.96)	2.83
16%	(1.21)	2.34
17%	(1.43)	1.91
18%	(1.63)	1.53
19%	(1.81)	1.18
20%	(1.97)	0.87
21%	(2.11)	0.59
22%	(2.24)	0.34
23%	(2.36)	0.11
24%	(2.47)	(0.11)
25%	(2.57)	(0.30)
26%	(2.67)	(0.48)
27%	(2.75)	(0.65)
28%	(2.83)	(0.80)
29%	(2.91)	(0.95)
30%	(2.98)	(1.08)



## INTERNAL RATE OF RETURN CALCULATION SCENARIO 3

Bank Loan, P (scenario 3) (IDR)	15,000,000	(Costs for converter kits + engine standardisation)
Total installment, n	60	month
Installment	MONTHLY	
Net monthly cash inflow (IDR)	606,540	(Compared to RON 88)
Net monthly cash inflow (IDR)	1,174,608	(Compared to RON 90)
Salvage value (S)	-	

INTEREST RATE	x 1 million, IDR	
	IRR to RON 88 (Sce 3)	IRR to RON 90 (Sce 3)
1%	12.27	37.80
2%	6.08	25.83
3%	1.79	17.51
4%	(1.28)	11.57
5%	(3.52)	7.23
6%	(5.20)	3.98
7%	(6.48)	1.49
8%	(7.49)	(0.46)
9%	(8.30)	(2.02)
10%	(8.95)	(3.29)
11%	(9.50)	(4.34)
12%	(9.95)	(5.22)
13%	(10.34)	(5.97)
14%	(10.67)	(6.61)
15%	(10.96)	(7.17)
16%	(11.21)	(7.66)
17%	(11.43)	(8.09)
18%	(11.63)	(8.47)
19%	(11.81)	(8.82)
20%	(11.97)	(9.13)
21%	(12.11)	(9.41)
22%	(12.24)	(9.66)
23%	(12.36)	(9.89)
24%	(12.47)	(10.11)
25%	(12.57)	(10.30)
26%	(12.67)	(10.48)
27%	(12.75)	(10.65)
28%	(12.83)	(10.80)
29%	(12.91)	(10.95)
30%	(12.98)	(11.08)

**PAYBACK PERIOD CALCULATION FOR SCENARIO 1**

MONTH	CASH OUT	PROCEED		PROCEED ACCUMULATIVE		PP LPG to RON 88 (Sce 1)	PP LPG to RON 90 (Sce 1)
	FLOW	RON 88	RON 90	RON 88	RON 90	(Million)	(Million)
0	<b>5,000,000.00</b>	-	-	-	-	(5.00)	(5.00)
1	-	632,874	1,200,942	632,874	1,200,942	(4.37)	(3.80)
2	-	632,874	1,200,942	1,265,747	2,401,883	(3.73)	(2.60)
3	-	632,874	1,200,942	1,898,621	3,602,825	(3.10)	(1.40)
4	-	632,874	1,200,942	2,531,495	4,803,766	(2.47)	(0.20)
5	-	632,874	1,200,942	3,164,368	6,004,708	(1.84)	1.00
6	-	632,874	1,200,942	3,797,242	7,205,650	(1.20)	2.21
7	-	632,874	1,200,942	4,430,115	8,406,591	(0.57)	3.41
8	-	632,874	1,200,942	5,062,989	9,607,533	0.06	4.61
9	-	632,874	1,200,942	5,695,863	10,808,475	0.70	5.81
10	-	632,874	1,200,942	6,328,736	12,009,416	1.33	7.01
11	-	632,874	1,200,942	6,961,610	13,210,358	1.96	8.21
12	-	632,874	1,200,942	7,594,484	14,411,299	2.59	9.41
13	-	632,874	1,200,942	8,227,357	15,612,241	3.23	10.61
14	-	632,874	1,200,942	8,860,231	16,813,183	3.86	11.81
15	-	632,874	1,200,942	9,493,105	18,014,124	4.49	13.01
16	-	632,874	1,200,942	10,125,978	19,215,066	5.13	14.22
17	-	632,874	1,200,942	10,758,852	20,416,008	5.76	15.42
18	-	632,874	1,200,942	11,391,726	21,616,949	6.39	16.62
19	-	632,874	1,200,942	12,024,599	22,817,891	7.02	17.82
20	-	632,874	1,200,942	12,657,473	24,018,832	7.66	19.02
21	-	632,874	1,200,942	13,290,346	25,219,774	8.29	20.22
22	-	632,874	1,200,942	13,923,220	26,420,716	8.92	21.42
23	-	632,874	1,200,942	14,556,094	27,621,657	9.56	22.62
24	-	632,874	1,200,942	15,188,967	28,822,599	10.19	23.82
25	-	632,874	1,200,942	15,821,841	30,023,540	10.82	25.02
26	-	632,874	1,200,942	16,454,715	31,224,482	11.45	26.22
27	-	632,874	1,200,942	17,087,588	32,425,424	12.09	27.43
28	-	632,874	1,200,942	17,720,462	33,626,365	12.72	28.63
29	-	632,874	1,200,942	18,353,336	34,827,307	13.35	29.83
30	-	632,874	1,200,942	18,986,209	36,028,249	13.99	31.03
31	-	632,874	1,200,942	19,619,083	37,229,190	14.62	32.23

32	-	632,874	1,200,942	20,251,956	38,430,132	15.25	33.43
33	-	632,874	1,200,942	20,884,830	39,631,073	15.88	34.63
34	-	632,874	1,200,942	21,517,704	40,832,015	16.52	35.83
35	-	632,874	1,200,942	22,150,577	42,032,957	17.15	37.03
36	-	632,874	1,200,942	22,783,451	43,233,898	17.78	38.23
37	-	632,874	1,200,942	23,416,325	44,434,840	18.42	39.43
38	-	632,874	1,200,942	24,049,198	45,635,782	19.05	40.64
39	-	632,874	1,200,942	24,682,072	46,836,723	19.68	41.84
40	-	632,874	1,200,942	25,314,946	48,037,665	20.31	43.04
41	-	632,874	1,200,942	25,947,819	49,238,606	20.95	44.24
42	-	632,874	1,200,942	26,580,693	50,439,548	21.58	45.44
43	-	632,874	1,200,942	27,213,567	51,640,490	22.21	46.64
44	-	632,874	1,200,942	27,846,440	52,841,431	22.85	47.84
45	-	632,874	1,200,942	28,479,314	54,042,373	23.48	49.04
46	-	632,874	1,200,942	29,112,187	55,243,314	24.11	50.24
47	-	632,874	1,200,942	29,745,061	56,444,256	24.75	51.44
48	-	632,874	1,200,942	30,377,935	57,645,198	25.38	52.65
49	-	632,874	1,200,942	31,010,808	58,846,139	26.01	53.85
50	-	632,874	1,200,942	31,643,682	60,047,081	26.64	55.05
51	-	632,874	1,200,942	32,276,556	61,248,023	27.28	56.25
52	-	632,874	1,200,942	32,909,429	62,448,964	27.91	57.45
53	-	632,874	1,200,942	33,542,303	63,649,906	28.54	58.65
54	-	632,874	1,200,942	34,175,177	64,850,847	29.18	59.85
55	-	632,874	1,200,942	34,808,050	66,051,789	29.81	61.05
56	-	632,874	1,200,942	35,440,924	67,252,731	30.44	62.25
57	-	632,874	1,200,942	36,073,798	68,453,672	31.07	63.45
58	-	632,874	1,200,942	36,706,671	69,654,614	31.71	64.65
59	-	632,874	1,200,942	37,339,545	70,855,556	32.34	65.86
60	-	632,874	1,200,942	37,972,418	72,056,497	32.97	67.06

**PAYBACK PERIOD CALCULATION FOR SCENARIO 2**

MONTH	CASH OUT	PROCEED		PROCEED ACCUMULATIVE		PP LPG to RON 88 (Sce 2)	PP LPG to RON 90 (Sce 2)
	FLOW	RON 88	RON 90	RON 88	RON 90	(Million)	(Million)
0	<b>5,000,000.00</b>	-	-	-	-	(5.00)	(5.00)
1	-	606,540	1,174,608	606,540	1,174,608	(4.39)	(3.83)
2	-	606,540	1,174,608	1,213,081	2,349,217	(3.79)	(2.65)
3	-	606,540	1,174,608	1,819,621	3,523,825	(3.18)	(1.48)
4	-	606,540	1,174,608	2,426,161	4,698,433	(2.57)	(0.30)
5	-	606,540	1,174,608	3,032,702	5,873,041	(1.97)	0.87
6	-	606,540	1,174,608	3,639,242	7,047,650	(1.36)	2.05
7	-	606,540	1,174,608	4,245,782	8,222,258	(0.75)	3.22
8	-	606,540	1,174,608	4,852,322	9,396,866	(0.15)	4.40
9	-	606,540	1,174,608	5,458,863	10,571,475	0.46	5.57
10	-	606,540	1,174,608	6,065,403	11,746,083	1.07	6.75
11	-	606,540	1,174,608	6,671,943	12,920,691	1.67	7.92
12	-	606,540	1,174,608	7,278,484	14,095,299	2.28	9.10
13	-	606,540	1,174,608	7,885,024	15,269,908	2.89	10.27
14	-	606,540	1,174,608	8,491,564	16,444,516	3.49	11.44
15	-	606,540	1,174,608	9,098,105	17,619,124	4.10	12.62
16	-	606,540	1,174,608	9,704,645	18,793,733	4.70	13.79
17	-	606,540	1,174,608	10,311,185	19,968,341	5.31	14.97
18	-	606,540	1,174,608	10,917,726	21,142,949	5.92	16.14
19	-	606,540	1,174,608	11,524,266	22,317,557	6.52	17.32
20	-	606,540	1,174,608	12,130,806	23,492,166	7.13	18.49
21	-	606,540	1,174,608	12,737,346	24,666,774	7.74	19.67
22	-	606,540	1,174,608	13,343,887	25,841,382	8.34	20.84
23	-	606,540	1,174,608	13,950,427	27,015,991	8.95	22.02
24	-	606,540	1,174,608	14,556,967	28,190,599	9.56	23.19
25	-	606,540	1,174,608	15,163,508	29,365,207	10.16	24.37
26	-	606,540	1,174,608	15,770,048	30,539,815	10.77	25.54
27	-	606,540	1,174,608	16,376,588	31,714,424	11.38	26.71
28	-	606,540	1,174,608	16,983,129	32,889,032	11.98	27.89
29	-	606,540	1,174,608	17,589,669	34,063,640	12.59	29.06
30	-	606,540	1,174,608	18,196,209	35,238,249	13.20	30.24
31	-	606,540	1,174,608	18,802,750	36,412,857	13.80	31.41

32	-	606,540	1,174,608	19,409,290	37,587,465	14.41	32.59
33	-	606,540	1,174,608	20,015,830	38,762,073	15.02	33.76
34	-	606,540	1,174,608	20,622,370	39,936,682	15.62	34.94
35	-	606,540	1,174,608	21,228,911	41,111,290	16.23	36.11
36	-	606,540	1,174,608	21,835,451	42,285,898	16.84	37.29
37	-	606,540	1,174,608	22,441,991	43,460,507	17.44	38.46
38	-	606,540	1,174,608	23,048,532	44,635,115	18.05	39.64
39	-	606,540	1,174,608	23,655,072	45,809,723	18.66	40.81
40	-	606,540	1,174,608	24,261,612	46,984,331	19.26	41.98
41	-	606,540	1,174,608	24,868,153	48,158,940	19.87	43.16
42	-	606,540	1,174,608	25,474,693	49,333,548	20.47	44.33
43	-	606,540	1,174,608	26,081,233	50,508,156	21.08	45.51
44	-	606,540	1,174,608	26,687,774	51,682,765	21.69	46.68
45	-	606,540	1,174,608	27,294,314	52,857,373	22.29	47.86
46	-	606,540	1,174,608	27,900,854	54,031,981	22.90	49.03
47	-	606,540	1,174,608	28,507,394	55,206,589	23.51	50.21
48	-	606,540	1,174,608	29,113,935	56,381,198	24.11	51.38
49	-	606,540	1,174,608	29,720,475	57,555,806	24.72	52.56
50	-	606,540	1,174,608	30,327,015	58,730,414	25.33	53.73
51	-	606,540	1,174,608	30,933,556	59,905,023	25.93	54.91
52	-	606,540	1,174,608	31,540,096	61,079,631	26.54	56.08
53	-	606,540	1,174,608	32,146,636	62,254,239	27.15	57.25
54	-	606,540	1,174,608	32,753,177	63,428,847	27.75	58.43
55	-	606,540	1,174,608	33,359,717	64,603,456	28.36	59.60
56	-	606,540	1,174,608	33,966,257	65,778,064	28.97	60.78
57	-	606,540	1,174,608	34,572,798	66,952,672	29.57	61.95
58	-	606,540	1,174,608	35,179,338	68,127,281	30.18	63.13
59	-	606,540	1,174,608	35,785,878	69,301,889	30.79	64.30
60	-	606,540	1,174,608	36,392,418	70,476,497	31.39	65.48

**PAYBACK PERIOD CALCULATION FOR SCENARIO 3**

MONTH	CASH OUT	PROCEED		PROCEED ACCUMULATIVE		PP LPG to RON 88 (Sc 3)	PP LPG to RON 90 (Sc 3)
	FLOW	RON 88	RON 90	RON 88	RON 90	(Million)	(Million)
0	15,000,000.00	-	-	-	-	(15.00)	(15.00)
1	-	632,874	1,200,942	632,874	1,200,942	(14.37)	(13.80)
2	-	632,874	1,200,942	1,265,747	2,401,883	(13.73)	(12.60)
3	-	632,874	1,200,942	1,898,621	3,602,825	(13.10)	(11.40)
4	-	632,874	1,200,942	2,531,495	4,803,766	(12.47)	(10.20)
5	-	632,874	1,200,942	3,164,368	6,004,708	(11.84)	(9.00)
6	-	632,874	1,200,942	3,797,242	7,205,650	(11.20)	(7.79)
7	-	632,874	1,200,942	4,430,115	8,406,591	(10.57)	(6.59)
8	-	632,874	1,200,942	5,062,989	9,607,533	(9.94)	(5.39)
9	-	632,874	1,200,942	5,695,863	10,808,475	(9.30)	(4.19)
10	-	632,874	1,200,942	6,328,736	12,009,416	(8.67)	(2.99)
11	-	632,874	1,200,942	6,961,610	13,210,358	(8.04)	(1.79)
12	-	632,874	1,200,942	7,594,484	14,411,299	(7.41)	(0.59)
13	-	632,874	1,200,942	8,227,357	15,612,241	(6.77)	0.61
14	-	632,874	1,200,942	8,860,231	16,813,183	(6.14)	1.81
15	-	632,874	1,200,942	9,493,105	18,014,124	(5.51)	3.01
16	-	632,874	1,200,942	10,125,978	19,215,066	(4.87)	4.22
17	-	632,874	1,200,942	10,758,852	20,416,008	(4.24)	5.42
18	-	632,874	1,200,942	11,391,726	21,616,949	(3.61)	6.62
19	-	632,874	1,200,942	12,024,599	22,817,891	(2.98)	7.82
20	-	632,874	1,200,942	12,657,473	24,018,832	(2.34)	9.02
21	-	632,874	1,200,942	13,290,346	25,219,774	(1.71)	10.22
22	-	632,874	1,200,942	13,923,220	26,420,716	(1.08)	11.42
23	-	632,874	1,200,942	14,556,094	27,621,657	(0.44)	12.62
24	-	632,874	1,200,942	15,188,967	28,822,599	0.19	13.82
25	-	632,874	1,200,942	15,821,841	30,023,540	0.82	15.02
26	-	632,874	1,200,942	16,454,715	31,224,482	1.45	16.22
27	-	632,874	1,200,942	17,087,588	32,425,424	2.09	17.43
28	-	632,874	1,200,942	17,720,462	33,626,365	2.72	18.63
29	-	632,874	1,200,942	18,353,336	34,827,307	3.35	19.83
30	-	632,874	1,200,942	18,986,209	36,028,249	3.99	21.03
31	-	632,874	1,200,942	19,619,083	37,229,190	4.62	22.23

32	-	632,874	1,200,942	20,251,956	38,430,132	5.25	23.43
33	-	632,874	1,200,942	20,884,830	39,631,073	5.88	24.63
34	-	632,874	1,200,942	21,517,704	40,832,015	6.52	25.83
35	-	632,874	1,200,942	22,150,577	42,032,957	7.15	27.03
36	-	632,874	1,200,942	22,783,451	43,233,898	7.78	28.23
37	-	632,874	1,200,942	23,416,325	44,434,840	8.42	29.43
38	-	632,874	1,200,942	24,049,198	45,635,782	9.05	30.64
39	-	632,874	1,200,942	24,682,072	46,836,723	9.68	31.84
40	-	632,874	1,200,942	25,314,946	48,037,665	10.31	33.04
41	-	632,874	1,200,942	25,947,819	49,238,606	10.95	34.24
42	-	632,874	1,200,942	26,580,693	50,439,548	11.58	35.44
43	-	632,874	1,200,942	27,213,567	51,640,490	12.21	36.64
44	-	632,874	1,200,942	27,846,440	52,841,431	12.85	37.84
45	-	632,874	1,200,942	28,479,314	54,042,373	13.48	39.04
46	-	632,874	1,200,942	29,112,187	55,243,314	14.11	40.24
47	-	632,874	1,200,942	29,745,061	56,444,256	14.75	41.44
48	-	632,874	1,200,942	30,377,935	57,645,198	15.38	42.65
49	-	632,874	1,200,942	31,010,808	58,846,139	16.01	43.85
50	-	632,874	1,200,942	31,643,682	60,047,081	16.64	45.05
51	-	632,874	1,200,942	32,276,556	61,248,023	17.28	46.25
52	-	632,874	1,200,942	32,909,429	62,448,964	17.91	47.45
53	-	632,874	1,200,942	33,542,303	63,649,906	18.54	48.65
54	-	632,874	1,200,942	34,175,177	64,850,847	19.18	49.85
55	-	632,874	1,200,942	34,808,050	66,051,789	19.81	51.05
56	-	632,874	1,200,942	35,440,924	67,252,731	20.44	52.25
57	-	632,874	1,200,942	36,073,798	68,453,672	21.07	53.45
58	-	632,874	1,200,942	36,706,671	69,654,614	21.71	54.65
59	-	632,874	1,200,942	37,339,545	70,855,556	22.34	55.86
60	-	632,874	1,200,942	37,972,418	72,056,497	22.97	57.06