

Financial Analysis of Anhydrous Ethanol from Clear Juice & Molasses

Petrogreen Company Limited

Key Assumptions (Base Case)

Case **1**

Investment Cost	684,000,000	Baht
Contingencies	38,790,000	Baht
Financing Cost	23,170,000	Baht
Hedging Cost	13,160,000	Baht
Total Investment Cost	759,120,000	Baht
Advisor & Pre-operating expense	15,880,000	Baht
Total Project Cost	775,000,000	Baht

1	Production will be operated in	2007		
2	Working Day (In season)	Year 1	Year 2 -15	
	Working Day (Off season)	120	150 days/year	
	Total day of alcohol production	180	180 days/year	
		300	330 days/year	
3	Plant Capacity (In season)	Year 1	Year 2 -15	
	Plant Capacity (Off season)	140,000	200,000 litres/day	
	Total Plant Capacity	160,000	200,000 litres/day	
		45,600,000	66,000,000 litres/year	
4	Required Amount of Raw Material	Year 1	Year 2 -15	
	- Clear Juice (In season)	1,740	2,485 tons/day	
	- Molasses (Off season)	602	753 tons/day	
5	Price of Raw Material			
	- Clear Juice (as at 12.5 CCS)	820	Baht/ton	
	- Molasses	2,600	Baht/ton	
6	Cost per unit (Baht/Litre)			
	- Utilities (Water + Steam + Electricity) (In season)	1.804 Baht/litre (Ethanol)		increased by 2% each year
	- Utilities (Water + Steam + Electricity) (Off season)	1.739 Baht/litre (Ethanol)		increased by 2% each year
	- Chemicals (In season)	0.398 Baht/litre (Ethanol)		increased by 2% each year
	- Chemicals (Off season)	0.329 Baht/litre (Ethanol)		increased by 2% each year
	- Repair & Maintenance	0.235 Baht/litre (Ethanol)		increased by 2% each year
	- Labour cost	0.154 Baht/litre (Ethanol)		increased by 5% each year
7	Insurance Premium Rate	1.0% of property's value		
8	Selling & Administrative Expenses			
	- Selling Expenses	0.10 Baht/litre (Ethanol)		
	- Administration Cost	4.00 Million Baht/year		increased by 3% each year
	- Salary	4.06 Million Baht/year		increased by 5% each year
9	Straight-line Amortisation Policy			
	- Machinery & Equipment	6.7 %/year		
	- Based on Project Life of	15 years		
10	Interest Rate of Long-term Loan	7.00%		
	Grace Period	1 years		
	Maturity	7 years		
	Interest Rate of Overdraft & Short-term Loan	7.50%		
11	Selling Price of Finished Product	15.00 Baht/litre		
12	Capital Structure (Include Financing cost)			
	- Debt	525,000,000 Baht		
	- Equity	250,000,000 Baht		
13	Exchange rate	40 Baht/Usd		
14	Discount Rate	13%		
15	Project IRR	13.16%		
16	NPV	6,304.39 Baht		
17	Payback Period	6.59 years		
18	Equity IRR	16.49%		

Assumptions

Item		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Working Day (In season)	Days	120	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Working Day (Off season)	Days	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Total day of alcohol production	Days	300	330	330	330	330	330	330	330	330	330	330	330	330	330	330
Plant Capacity (In season)	litres/day	140,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Plant Capacity (Off season)	litres/day	160,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Total Plant Capacity	litres/year	45,600,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000	66,000,000
% Capacity		69%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Required Amount of Raw Material																
- Clear Juice (In season)	Tons/day	1,740	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485	2,485
- Molasses (Off season)	Tons/day	602	753	753	753	753	753	753	753	753	753	753	753	753	753	753
Price of Raw Material																
- Clear Juice (as at 12.5 CCS)	Baht/ton	820	820	820	820	820	820	820	820	820	820	820	820	820	820	820
<i>Growth</i>			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
- Molasses	Baht/ton	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
<i>Growth</i>			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cost per unit																
- Utilities (In season)	(Baht/Litre)	1.804	1.840	1.877	1.915	1.953	1.992	2.032	2.073	2.114	2.156	2.199	2.243	2.288	2.334	2.381
<i>Growth</i>			2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
- Utilities ((Off season)	(Baht/Litre)	1.739	1.774	1.810	1.846	1.883	1.920	1.959	1.998	2.038	2.079	2.120	2.163	2.206	2.250	2.295
<i>Growth</i>			2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
- Chemicals (In season)	(Baht/Litre)	0.398	0.406	0.414	0.423	0.431	0.440	0.449	0.458	0.467	0.476	0.486	0.495	0.505	0.515	0.526
<i>Growth</i>			2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
- Chemicals (Off season)	(Baht/Litre)	0.329	0.335	0.342	0.349	0.356	0.363	0.370	0.377	0.385	0.393	0.401	0.409	0.417	0.425	0.434
<i>Growth</i>			2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
- Repair & Maintenance	(Baht/Litre)	0.235	0.240	0.244	0.249	0.254	0.259	0.264	0.270	0.275	0.281	0.286	0.292	0.298	0.304	0.310
<i>Growth</i>			2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
- Labour Cost	(Baht/Litre)	0.154	0.162	0.170	0.179	0.187	0.197	0.207	0.217	0.228	0.239	0.251	0.264	0.277	0.291	0.305
<i>Growth</i>			5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Insurance Premium Rate	(% of Property's Value)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Selling & Administrative Expense																
- Selling Expense	(Baht/Litre)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
- Administraive Expense	(Thousand Baht)	4,000	4,120	4,244	4,371	4,502	4,637	4,776	4,919	5,067	5,219	5,376	5,537	5,703	5,874	6,050
<i>Growth</i>			3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
- Salary & Welfare	(Thousand Baht)	4,060	4,263	4,476	4,700	4,935	5,182	5,441	5,713	5,998	6,298	6,613	6,944	7,291	7,656	8,039
<i>Growth</i>			5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Selling Price of Finished Product	(Baht/Litre)	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
<i>Growth</i>			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Interest Rate of Long-term Loan	(%/year)	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Interest Rate of Overdraft & Short-term Loan	(%/year)	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%
Corporate Income Tax (BOI Privilege)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	15.00%	15.00%	15.00%	15.00%	30.00%	30.00%
Corporate Income Tax (NO - BOI Privilege)		30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%
Dividend Payout	(%/Net Profit)	0.00%	25.00%	26.25%	27.56%	28.94%	30.39%	31.91%	33.50%	35.18%	36.94%	38.78%	40.72%	42.76%	44.90%	47.14%

Cashflow Statement

(Unit : Thousand Baht)

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	(Operate)															
Cash flow from Operating Activities																
Net Income	(15,880)	5,687	55,503	56,524	57,966	59,299	60,696	62,503	61,217	49,498	45,367	41,125	36,769	32,295	22,811	18,922
Add Depreciation	-	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608
Decrease (Increase) in Account Receivable	-	(56,219)	(25,151)	-	-	-	-	-	-	-	-	-	-	-	-	-
Decrease (Increase) in Inventory	-	(20,775)	(8,404)	(88)	(90)	(91)	(93)	(95)	(97)	(99)	(101)	(103)	(105)	(107)	(109)	(111)
Increase (Decrease) in Account Payable	-	45,177	20,691	236	240	245	250	255	260	265	271	276	282	287	293	299
Net cash flow from Operation Activities	(15,880)	24,477	93,248	107,280	108,724	110,061	111,461	113,271	111,988	100,272	96,145	91,906	87,554	83,083	73,603	69,718
Cash flow from Investing Activities																
Decrease (Increase) in Fixed Asset	(759,120)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net cash flow from Investing Activities	(759,120)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash flow from Financing Activites																
Increase (Decrease) in Paid-Up Capital	250,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase (Decrease) in Long-term loan	525,000	(30,000)	(70,000)	(80,000)	(80,000)	(80,000)	(90,000)	(95,000)	-	-	-	-	-	-	-	-
Increase (Decrease) in Overdraft & Short-term loan	-	5,523	(5,523)	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Paid	-	-	(13,876)	(14,838)	(15,977)	(17,162)	(18,444)	(19,943)	(20,509)	(17,412)	(16,757)	(15,950)	(14,973)	(13,809)	(10,241)	(8,920)
Net cash flow from Financing Activities	775,000	(24,477)	(89,399)	(94,838)	(95,977)	(97,162)	(108,444)	(114,943)	(20,509)	(17,412)	(16,757)	(15,950)	(14,973)	(13,809)	(10,241)	(8,920)
Net Cash Flow	-	-	3,849	12,443	12,748	12,899	3,017	(1,672)	91,479	82,860	79,388	75,957	72,581	69,274	63,361	60,798
Beginning Balance Cash Available	-	-	-	3,849	16,291	29,039	41,938	44,955	43,283	134,762	217,622	297,010	372,966	445,547	514,821	578,183
Ending Balance Cash Available	-	-	3,849	16,291	29,039	41,938	44,955	43,283	134,762	217,622	297,010	372,966	445,547	514,821	578,183	638,981

Profit & Loss Statement

Case **1**

(Units: Thousand Baht)

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sales	0	684,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000
Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Revenue	0	684,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000	990,000
Raw Materials																
- Clear juice	0	171,167	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655	305,655
- Molasses	0	281,923	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404	352,404
Labour Cost	0	10,178	10,687	11,221	11,782	12,371	12,990	13,639	14,321	15,038	15,789	16,579	17,408	18,278	19,192	20,152
Factory Expenses																
- Utilities	0	80,405	119,080	121,461	123,890	126,368	128,896	131,474	134,103	136,785	139,521	142,311	145,157	148,061	151,022	154,042
- Chemicals	0	16,155	24,254	24,739	25,234	25,738	26,253	26,778	27,314	27,860	28,417	28,986	29,565	30,157	30,760	31,375
- Repair and Maintenance	0	10,709	15,810	16,126	16,449	16,778	17,113	17,456	17,805	18,161	18,524	18,894	19,272	19,658	20,051	20,452
- Insurance Premium Rate	0	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591	7,591
Depreciation	0	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608	50,608
Cost of Production	0	628,736	886,089	889,806	893,613	897,514	901,510	905,605	909,801	914,102	918,510	923,028	927,661	932,411	937,283	942,279
Selling and Administration Expenses	15,880	12,620	14,983	15,320	15,671	16,037	16,419	16,817	17,232	17,666	18,117	18,589	19,081	19,594	20,130	20,689
Total Cost	15,880	641,356	901,072	905,126	909,284	913,551	917,929	922,422	927,033	931,767	936,627	941,617	946,742	952,006	957,413	962,968
Earning before Interest & Income Tax	-15,880	42,644	88,928	84,874	80,716	76,449	72,071	67,578	62,967	58,233	53,373	48,383	43,258	37,994	32,587	27,032
Interest Expense	0	36,957	33,425	28,350	22,750	17,150	11,375	5,075	1,750	0	0	0	0	0	0	0
Earning before Income Tax	-15,880	5,687	55,503	56,524	57,966	59,299	60,696	62,503	61,217	58,233	53,373	48,383	43,258	37,994	32,587	27,032
Income Tax	0	0	0	0	0	0	0	0	0	8,735	8,006	7,257	6,489	5,699	9,776	8,110
Net Profit	-15,880	5,687	55,503	56,524	57,966	59,299	60,696	62,503	61,217	49,498	45,367	41,125	36,769	32,295	22,811	18,922

Balance Sheet Statement

Case

1

(Unit: Thousand Baht)

Item	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Assets																
Current Assets																
Cash in hand & at Bank	0	0	3,849	16,291	29,039	41,938	44,955	43,283	134,762	217,622	297,010	372,966	445,547	514,821	578,183	638,981
Accounts Receivable	0	56,219	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370	81,370
Inventories	0	20,775	29,180	29,267	29,357	29,448	29,542	29,637	29,734	29,833	29,933	30,036	30,141	30,248	30,358	30,469
Total Current Assets	0	76,995	114,398	126,929	139,766	152,757	155,866	154,290	245,865	328,824	408,313	484,373	557,058	626,440	689,911	750,819
Fixed Assets																
Gross Property, plant & equipment	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120	759,120
Less: Accumulated Depreciation	0	50,608	101,216	151,824	202,432	253,040	303,648	354,256	404,864	455,472	506,080	556,688	607,296	657,904	708,512	759,120
Net Fixed Assets	759,120	708,512	657,904	607,296	556,688	506,080	455,472	404,864	354,256	303,648	253,040	202,432	151,824	101,216	50,608	0
Total Assets	759,120	785,507	772,302	734,225	696,454	658,837	611,338	559,154	600,121	632,472	661,353	686,805	708,882	727,656	740,519	750,819
Liabilities and Equity																
Current Liabilities																
Bank overdraft and Short-term loan	0	5,523	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accounts Payable	0	45,177	65,868	66,103	66,344	66,589	66,839	67,094	67,354	67,620	67,890	68,166	68,448	68,735	69,028	69,327
Current Portion of Long-term loan	30,000	70,000	80,000	80,000	80,000	90,000	95,000	0	0	0	0	0	0	0	0	0
Total Current Liabilities	30,000	120,700	145,868	146,103	146,344	156,589	161,839	67,094	67,354	67,620	67,890	68,166	68,448	68,735	69,028	69,327
Long-term Liabilities - Net	495,000	425,000	345,000	265,000	185,000	95,000	0	0	0	0	0	0	0	0	0	0
Total Liabilities	525,000	545,700	490,868	411,103	331,344	251,589	161,839	67,094	67,354	67,620	67,890	68,166	68,448	68,735	69,028	69,327
Equity																
Paid-up Capital	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Retained Earnings	(15,880)	(10,193)	31,434	73,121	115,110	157,248	199,499	242,060	282,767	314,853	343,463	368,639	390,434	408,921	421,491	431,493
Total Equity	234,120	239,807	281,434	323,121	365,110	407,248	449,499	492,060	532,767	564,853	593,463	618,639	640,434	658,921	671,491	681,493
Total Liabilities & Equity	759,120	785,507	772,302	734,225	696,454	658,837	611,338	559,154	600,121	632,472	661,353	686,805	708,882	727,656	740,519	750,819