

Chapter 4

Case study results

From the last chapter, it showed about how to calculate the cash flow, pay back period, net present value and internal rate of return for this project already. So, this chapter will show the results, which calculated from the cash flow for investment decision.

In table 4.1 and 4.2, they will show the result table of cash flow which each storage tank will be calculated for monthly cashflows for 5 years (60 months). The cashflows are calculated like steps as follow.

4.1 Calculation steps

The cashflows in each line steps items of the result table can show in details as follow:

- A : Unit margin is the least margin per liter of fuel oil. (Unit: Baht)
- B : Sale volume is the minimum volume of each storage tanks.
(Unit: liter)
- C : Net sales is multiple between (A) and (B). It is the income before tax. (Unit: Baht)
- D : Fixed costs is the cost expenses of each storage tanks and installation as first period.
- E : Depreciation rate, here uses the straight line method for calculation. It is occurred from divide 60 months into storage tank and installation costs.
- F : Depreciation cost is calculated from multiple between (D) and (E). (Unit: Baht)
- G : Earning before tax (Unit: Baht)

- H : Government tax, here government set at 30 % of earning before tax.
- I : Net operating income is the income after tax.
- K : Net operating cash flow is calculated from net operating income (I) plus the depreciation cost (F) that cut it out before tax calculation.
- L : Net salvage value is the salvage value of each storage tanks as the end of project (5 years).
- M : Total project cash flow is the cash flow for this project.

After the cashflows in each month are calculated, the investors have to calculate payback period, net present value and internal rate of return. The results here use Microsoft Excel software for calculation. The results are shown as on the tables.

Table 4.1 Cashflows of tank 15,000 liter with 3 meter stand

Net Cash Flows, 5 years.	(a Tank, 15,000 Ltr. with 3 m. stand)							
Months	0	1	2	3	4	5	6	7
Unit margin		0.0000	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume		0	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales		0.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs								
Fixed costs (investment)	144,000.00							
Depreciation rate for 5 years		0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	0.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	-144,000.00	-2,400.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	0.00	0.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	-144,000.00	-2,400.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	0.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	-144,000.00	0.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value								
Total projected cash flow	-144,000.00	0.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

Interest rate= 8.25%

IRR 50.05%

Net Cash Flows, 5 years.

Months	8	9	10	11	12	13	14	15	16
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value									
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Net Cash Flows, 5 years.

Months	17	18	19	20	21	22	23	24	25
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value									
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Net Cash Flows, 5 years.

Months	26	27	28	29	30	31	32	33	34
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value									
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Net Cash Flows, 5 years.

Months	35	36	37	38	39	40	41	42	43
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value									
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Net Cash Flows, 5 years.

Months	44	45	46	47	48	49	50	51	52
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value									
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Net Cash Flows, 5 years.

Months	53	54	55	56	57	58	59	60
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Net Sales	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00	8,790.00
Variable costs								
Fixed costs (investment)								
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Earnings before taxes	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00	6,390.00
Taxes (30 %)	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00	1,917.00
Net operating income	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00	4,473.00
Add back noncash expenses (depreciation)	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00	2,400.00
Net operating cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00
Net salvage value								0.00
Total projected cash flow	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00	6,873.00

Pay Back Period 22.0

NPV 184,876.58

IRR 50.05%

Table 4.2 Cashflows of tank 20,000 liter with 3 meter stand

Net Cash Flows, 5 years.	(a Tank, 20,000 Ltr. with 3 m. stand)							
Months	0	1	2	3	4	5	6	7
Unit margin		0.0000	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume		0	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales		0.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs								
Fixed costs (investment)	154,000.00							
Depreciation rate for 5 years		0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	0.00	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	-154,000.00	-2,566.67	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	0.00	0.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	-154,000.00	-2,566.67	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	0.00	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	-154,000.00	0.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value								
Total projected cash flow	-154,000.00	0.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

Interest rate= 8.25%

IRR 63.22%

Net Cash Flows, 5 years.

Months	8	9	10	11	12	13	14	15	16
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value									
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

Net Cash Flows, 5 years.

Months	17	18	19	20	21	22	23	24	25
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value									
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

Net Cash Flows, 5 years.

Months	26	27	28	29	30	31	32	33	34
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value									
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

Net Cash Flows, 5 years.

Months	35	36	37	38	39	40	41	42	43
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value									
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

Net Cash Flows, 5 years.

Months	44	45	46	47	48	49	50	51	52
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs									
Fixed costs (investment)									
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value									
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

Net Cash Flows, 5 years.

Months	53	54	55	56	57	58	59	60
Unit margin	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860	0.5860
Sale Volume	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Net Sales	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00	11,720.00
Variable costs								
Fixed costs (investment)								
Depreciation rate for 5 years	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667	0.01667
Depreciation (equipment)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Earnings before taxes	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33	9,153.33
Taxes (30 %)	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00	2,746.00
Net operating income	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33	6,407.33
Add back noncash expenses (depreciation)	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67	2,566.67
Net operating cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00
Net salvage value								0.00
Total projected cash flow	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00	8,974.00

Pay Back Period 18.2

NPV 275,178.23

IRR 63.22%

From the results, the net present values from both tables are very high. Analysis of these results will be done on next chapter. Hence, this study try to calculate the minimum unit margin that makes the net present value equal zero by varying the volume. The minimum unit margins are plotted on Y-axis while volume on X-axis. This chart provides the company more benefit because it can show that what minimum unit margin which can set the price to the customers while still cover the investment cost. There are many interest rates on the chart because this study wants to cover all of interest rates that are possible. The charts for 15,000 liter and 20,000 liters storage tanks are showed as next pages. (For the details in tables, see in Appendix E)

Chart 4.1 The chart between unit margin and volume at zero NPV for 15,000 liter storage tank

Unit margin vs Sale vol.

15,000 liter

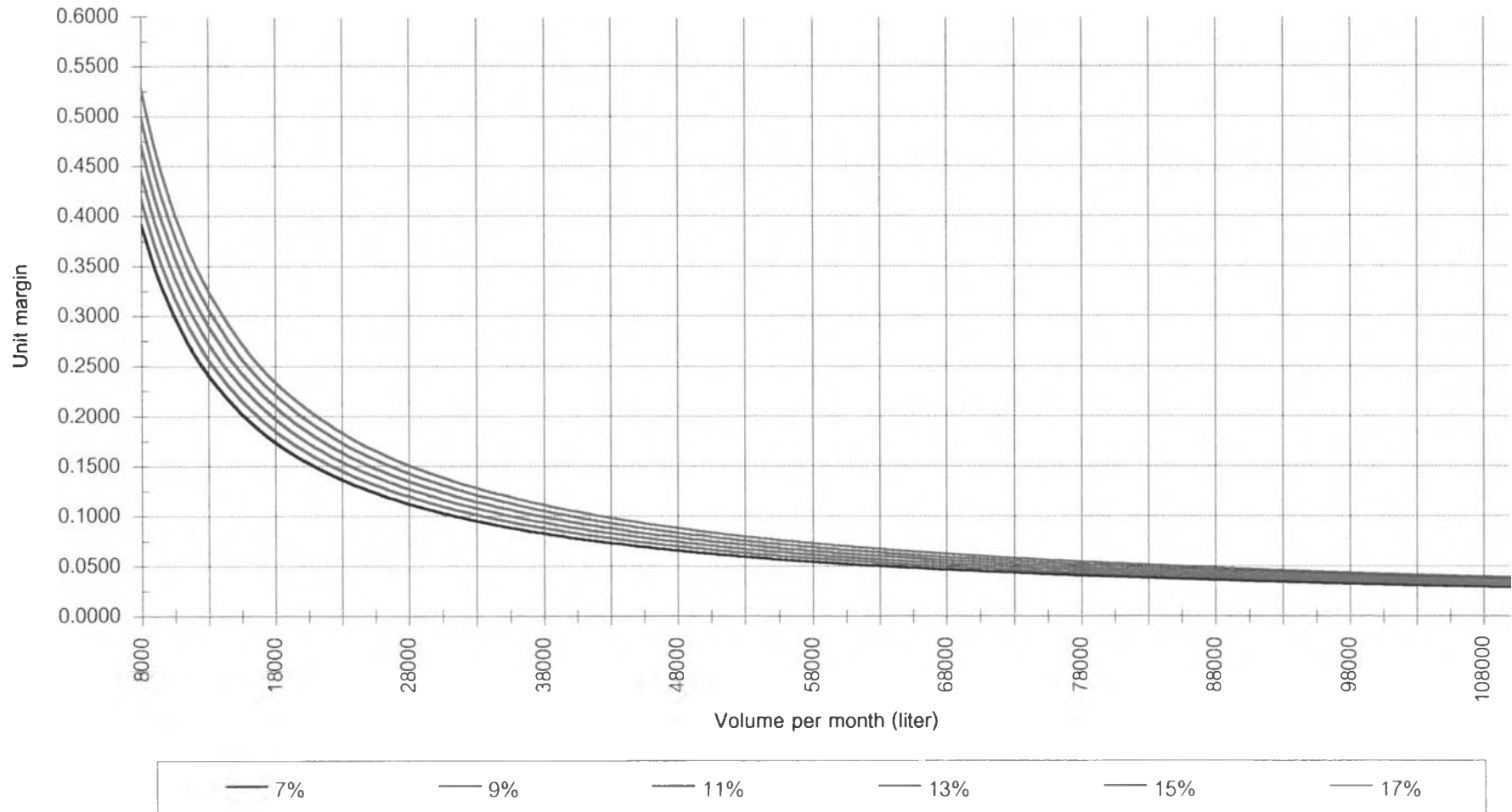


Chart 4.2 The chart unit margin and volume at Zero NPV for 20,000 liter storage tank

Unit margin vs Sale vol.

20,000 liter

