

Lampiran-1: Biaya produksi tahun 2000 dan 2001

	Tahun 2000	Tahun 2001
BIAYA VARIABEL (US \$):		
<u>Bahan Baku</u>		
Propylene Oxide	17,785,979.90	18,281,157.75
Etylene Oxide	1,971,560.45	2,026,450.48
Glycerine	681,051.01	700,012.09
BHT	3,500,640.00	3,598,101.00
Celite	9,604.32	9,871.71
Sulfuric Acid	2,040.54	2,097.35
Potassium Hydgroxide	73,902.40	75,959.91
Magnesium Silicate	66,123.20	67,964.13
Naugard-445	108,325.36	111,341.24
Penotiazine	21,488.54	22,086.80
<u>Utilitas:</u>		
Electricity	401.45	412.63
Water	7.90	8.12
Fuel-Oil	207,364.15	213,137.36
H2SO4	188.50	193.74
LPG	18,273.34	18,782.09
NaOH	2,682.03	2,756.70
N2	127.33	130.88
<u>Biaya Pengolahan Limbah</u>		
Fuel Oil	6,043.84	6,212.11
Ash	27,646.08	28,415.77
Sub Total	24,483,450.35	25,165,091.87
BIAYA TETAP (US \$):		
<u>Biaya Manufaktur</u>		
- Karyawan	825,000.00	841,500.00
- Energi	135,000.00	137,700.00
- Perawatan	300,000.00	306,000.00
- Depresiasi	1,700,000.00	1,700,000.00
- Lain-lain	450,000.00	459,000.00
Sub Total	3,410,000.00	3,444,200.00
<u>Biaya Pemasaran</u>	200,000.00	204,000.00
<u>Biaya Alokasi</u> (Corp.Serv.)	600,000.00	612,000.00
TOTAL BIAYA (US \$)	28,693,450.35	29,425,291.87
Biaya per unit (US\$/MT)	959	976

Lampiran-2: Tingkat keuntungan perusahaan tahun 2000 dan 2001

	Tahun 2000	Tahun 2001
Penjualan (US \$)	31.715.200,00	32.598.180,00
Biaya Variabel (US \$)	24.483.450,35	25,165,091.87
Biaya Tetap (US \$)	3.410.000,00	3,444,200.00
Biaya Pemasaran (US \$)	200.000,00	204,000.00
Biaya Alokasi (US \$)	600.000,00	612,000.00
Total Biaya (US \$)	28.693.450,35	29,425,291.87
Pendapatan Lain-Lain	161.125,00	156,372.00
Laba Sebelum Pajak (US \$)	3.182.874,65	3,329,260.13
Pajak (US \$)	954.862,39	998,778.04
Laba Setelah Pajak (US \$)	2.228.012,25	2,330,482.09
ROS (%)	7.2	7.1

Lampiran-3: Biaya produksi 10 tahun mendatang tanpa investasi

Tahun ke	1	2	3	4	5	6	7	8	9	10
BIAYA VARIABEL (US \$)										
Bahan Baku:										
Propylene Oxide	18,576,900.00	16,948,132.00	19,327,094.64	19,713,636.53	20,107,909.26	20,510,087.45	20,920,268.80	21,338,674.17	21,765,447.66	22,200,758.61
Ethylene Oxide	2,059,200.00	2,100,384.00	2,142,381.68	2,185,238.51	2,228,944.30	2,273,523.19	2,318,988.65	2,365,373.63	2,412,661.00	2,460,964.62
Glycine	710,400.00	724,608.00	739,100.16	753,862.16	768,959.61	784,338.00	800,025.78	816,026.30	832,346.62	848,983.78
BHT	3,651,570.00	3,724,601.40	3,799,093.43	3,875,075.30	3,952,578.80	4,031,628.34	4,112,260.91	4,194,508.12	4,278,396.25	4,363,964.17
Cellite	10,035.00	10,235.70	10,440.41	10,648.22	10,862.21	11,079.45	11,301.04	11,527.08	11,757.60	11,992.75
Sulfuric Acid	2,139.00	2,161.78	2,225.42	2,268.92	2,315.32	2,361.63	2,408.86	2,457.04	2,506.18	2,556.30
Potassium Hydroxide	77,178.00	78,721.56	80,295.99	81,901.91	83,539.95	85,210.75	86,914.96	88,653.26	90,426.33	92,234.85
Magnesium Silicate	66,991.00	70,370.62	71,778.24	73,213.80	74,678.08	76,171.84	77,695.07	79,246.97	80,833.95	82,450.63
Naugard-445	113,010.00	115,270.20	117,575.60	119,927.12	122,325.86	124,772.17	127,267.62	129,812.87	132,409.23	135,057.41
Penotazine	22,416.00	22,864.32	23,321.61	23,788.04	24,263.80	24,749.08	25,244.06	25,748.94	26,263.92	26,789.20
Utilities:										
Electricity	419.30	427.69	436.24	444.96	453.86	462.94	472.20	481.64	491.28	501.10
Water	8.16	8.32	8.49	8.66	8.83	9.01	9.19	9.37	9.56	9.75
Fuel-Oil	216,153.00	220,476.06	224,885.58	229,383.28	233,970.98	238,650.38	243,423.39	248,291.85	253,257.89	258,322.84
H2SO4	168.00	201.86	208.00	210.12	214.32	218.61	222.98	227.44	231.89	236.63
LPG	19,051.20	19,432.22	19,820.87	20,217.29	20,621.63	21,034.08	21,454.75	21,883.84	22,321.52	22,767.95
NaOH	2,802.80	2,858.65	2,915.83	2,974.14	3,033.62	3,094.30	3,156.18	3,219.81	3,283.69	3,348.37
N2	132.65	135.30	138.01	140.77	143.58	146.45	149.38	152.37	155.42	158.53
Pencapaian Limbah:										
Fuel Oil	6,300.00	6,426.00	6,554.52	6,685.61	6,819.32	6,955.71	7,094.82	7,236.72	7,381.45	7,529.08
Ash	26,800.00	26,376.00	25,963.52	30,582.79	31,174.05	31,797.53	32,433.48	33,082.15	33,743.79	34,418.67
Sub Total	25,565,403.91	26,076,711.99	26,598,248.23	27,130,211.15	27,672,615.37	28,228,271.66	28,790,797.11	29,369,613.06	29,953,845.32	30,553,024.22
BIAYA TETAP (US \$):										
Biaya Manufaktur										
- Personnel	825,000.00	841,500.00	858,330.00	875,498.60	893,006.53	910,868.66	929,084.00	947,665.88	966,618.99	985,951.37
- Energy	135,000.00	137,700.00	140,454.00	143,263.08	146,128.34	149,050.91	152,031.93	155,072.57	158,174.02	161,337.50
- Maintenance	300,000.00	306,000.00	312,120.00	318,362.40	324,729.65	331,224.24	337,848.73	344,605.70	351,497.81	358,527.77
- Depreciation	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00	1,700,000.00
- Others	450,000.00	459,000.00	468,180.00	477,543.60	487,094.47	496,836.36	506,773.09	516,908.55	527,248.72	537,791.66
Sub Total	3,410,000.00	3,444,200.00	3,479,094.00	3,514,995.68	3,550,959.98	3,587,978.17	3,625,737.74	3,664,252.48	3,703,537.54	3,743,606.29
Biaya Pemasaran										
	200,000.00	204,000.00	208,060.00	212,241.60	216,466.43	220,816.16	225,292.46	229,737.13	234,331.88	239,018.51
Biaya Alokasi										
(Corp. Serv.)	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
TOTAL BIAYA (US \$)	28,775,403.91	30,336,811.99	30,909,650.23	31,493,843.23	32,089,720.09	32,697,514.50	33,317,464.79	33,948,614.08	34,594,810.36	35,252,706.57
Biaya Per Unit (US\$/MT)	993	1011	1030	1050	1070	1090	1111	1132	1153	1175

Lampiran-4: Biaya produksi setelah investasi

	1	2	3	4	5	6	7	8	9	10
	Tahun ke									
BIAYA VARIABEL (US \$):										
Bahan Baku:										
Propylene Oxide	20,434,280.00	22,737,758.40	25,125,223.03	27,589,081.15	28,151,072.87	28,714,084.43	28,288,376.32	29,874,143.84	30,471,826.72	31,081,059.25
Ethylene Oxide	2,295,120.00	2,520,480.80	2,785,108.16	3,059,335.32	3,120,522.03	3,182,932.47	3,246,591.12	3,311,522.84	3,377,753.40	3,445,308.46
Glycine	781,440.00	889,528.80	980,830.21	1,055,435.03	1,076,543.73	1,088,074.60	1,120,036.10	1,142,438.82	1,165,286.55	1,188,581.27
BHT	3,245,814.00	3,611,705.76	3,980,934.86	4,383,888.45	4,471,588.22	4,580,987.54	4,652,217.80	4,745,281.85	4,840,187.08	4,936,970.42
Co. Catalyst	181,500.00	201,980.00	223,185.80	245,139.05	250,041.63	255,042.67	260,143.52	265,346.39	270,653.32	276,068.36
Utilities:										
Electricity	481.23	513.22	567.11	622.85	635.41	648.12	661.08	674.30	687.79	701.54
Water	8.98	8.99	11.04	12.12	12.37	12.61	12.87	13.12	13.39	13.65
Fuel/Oil	237,788.30	264,571.27	282,351.26	321,136.81	327,559.34	334,110.53	340,782.74	347,608.59	354,590.77	361,651.98
H2SO4	217.80	242.35	267.80	294.17	300.05	306.05	312.17	318.42	324.78	331.28
LPG	20,956.32	23,318.67	25,767.13	28,304.20	28,870.28	29,447.89	30,036.84	30,637.38	31,250.12	31,875.13
NaOH	3,082.86	3,430.38	3,790.57	4,163.80	4,247.07	4,332.02	4,418.88	4,507.03	4,597.17	4,689.11
N2	145.81	162.36	178.41	197.07	201.02	205.04	209.14	213.32	217.59	221.94
Sub Total	27,170,775.40	30,293,882.81	33,408,187.40	36,987,619.91	37,431,572.31	38,180,203.76	38,943,807.83	39,722,883.99	40,517,137.67	41,327,480.42
BIAYA TETAP (US \$):										
Biaya Manufaktur:										
- Personnel	825,000.00	641,500.00	858,330.00	875,498.80	683,006.53	910,886.86	928,084.00	947,865.88	968,618.99	885,951.37
- Energy	135,000.00	137,700.00	140,454.00	143,263.08	146,128.34	148,050.91	152,091.83	155,072.57	156,174.02	161,337.50
- Maintenance	300,000.00	308,000.00	312,120.00	318,982.40	324,729.65	331,224.24	337,848.73	344,805.70	351,497.81	358,527.77
- Depreciation	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00
- Others	450,000.00	458,000.00	468,180.00	477,543.80	487,084.47	498,838.36	508,773.09	518,908.55	527,248.72	537,791.68
Sub Total	3,910,000.00	3,944,200.00	3,979,084.00	4,014,865.68	4,050,858.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,808.29
Biaya Permisian:										
	200,000.00	204,000.00	208,080.00	212,241.80	216,488.43	220,816.16	225,232.48	229,737.13	234,331.86	239,018.51
Biaya Alokasi (Corp. Serv.)										
	600,000.00	612,000.00	624,240.00	636,724.80	648,459.30	662,448.48	675,697.45	689,211.40	702,895.83	717,055.54
TOTAL BIAYA (US \$)	31,880,775.40	34,883,882.81	38,219,601.40	41,581,251.99	42,348,477.03	43,151,446.58	43,970,475.51	44,805,885.02	45,858,002.72	46,527,162.77
Biaya Per Unit (US\$/MT)	968	972	980	990	1008	1027	1047	1067	1087	1108

Lampiran-5: Tingkat keuntungan perusahaan tanpa investasi

Tahun ke	1	2	3	4	5	6	7	8	9	10
Penjualan (US \$)	33,000,000.00	33,660,000.00	34,333,200.00	35,019,864.00	35,720,261.28	36,434,666.51	37,163,359.84	37,906,627.03	38,664,759.57	39,438,054.76
Biaya Variabel (US \$)	25,565,403.91	26,076,711.99	26,598,246.23	27,130,211.15	27,672,815.37	28,226,271.68	28,790,797.11	29,366,613.06	29,953,945.32	30,553,024.22
Biaya Tetap:										
- Biaya Manufaktur:	3,410,000.00	3,444,200.00	3,479,084.00	3,514,665.68	3,550,958.99	3,587,978.17	3,625,737.74	3,664,252.49	3,703,537.54	3,743,608.29
- Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,486.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51
- Biaya Alokasi	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya	29,775,403.91	30,336,911.99	30,909,650.23	31,493,843.23	32,089,720.09	32,697,514.50	33,317,464.79	33,949,814.08	34,594,810.36	35,252,706.57
Laba Sebelum Pajak (US\$)	3,224,596.09	3,323,088.01	3,423,549.77	3,526,020.77	3,630,541.19	3,737,152.01	3,845,895.05	3,956,812.95	4,069,949.21	4,185,348.19
Pajak	967,378.83	996,926.40	1,027,064.93	1,057,806.23	1,089,162.36	1,121,145.60	1,153,788.51	1,187,043.89	1,220,984.76	1,255,604.46
Laba Setelah Pajak (US\$)	2,257,217.26	2,326,161.61	2,396,484.84	2,468,214.54	2,541,378.83	2,616,006.41	2,692,126.53	2,769,769.07	2,848,964.45	2,929,743.74
ROS (%)	6.8	6.9	7.0	7.0	7.1	7.2	7.2	7.3	7.4	7.4

Lampiran-6: Tingkat keuntungan perusahaan setelah investasi

Tahun ke	1	2	3	4	5	6	7	8	9	10
Penjualan (us \$)	36,300,000.00	40,392,000.00	44,633,160.00	49,027,809.60	50,008,365.79	51,008,533.11	52,028,703.77	53,069,277.85	54,130,663.40	55,213,276.67
Biaya Variabel (us \$)	27,170,775.40	30,233,662.81	33,408,197.40	36,697,619.91	37,431,572.31	38,180,203.76	38,943,807.83	39,722,683.99	40,517,137.67	41,327,480.42
Biaya Tetap (us \$):										
- Biaya Manufaktur:	3,910,000.00	3,944,200.00	3,979,064.00	4,014,665.68	4,050,958.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29
- Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,486.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51
- Biaya Alokasi	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya (us \$)	31,880,775.40	34,983,862.81	38,219,601.40	41,581,251.99	42,348,477.03	43,151,446.58	43,970,475.51	44,805,885.02	45,658,002.72	46,527,162.77
Laba Sebelum Pajak (US\$)	4,419,224.60	5,398,137.19	6,413,558.60	7,466,557.61	7,659,888.76	7,857,086.53	8,058,228.26	8,263,392.83	8,472,660.68	8,686,113.90
Pajak (us \$)	1,325,767.38	1,619,441.16	1,924,067.58	2,239,967.28	2,297,966.63	2,357,125.96	2,417,468.48	2,479,017.85	2,541,798.21	2,605,834.17
Laba Setelah Pajak (US\$)	3,093,457.22	3,778,696.04	4,489,491.02	5,226,590.32	5,361,922.13	5,499,960.57	5,640,759.78	5,784,374.98	5,930,862.48	6,080,279.73
ROS (%)	8.5	9.4	10.1	10.7	10.7	10.8	10.8	10.9	11.0	11.0

Lampiran-8: Analisa Sensitifitas terhadap biaya produksi apabila harga propylene oxide naik 10%

Tahun ke	1	2	3	4	5	6	7	8	9	10	
BIAYA VARIABEL (US \$):											
Bahan Baku:											
Propylene Oxide	22,477,888.00	25,011,534.24	27,637,745.34	30,359,000.26	30,968,180.27	31,585,503.87	32,217,213.85	32,861,558.23	33,518,789.39	34,189,185.18	
Ethylene Oxide	2,285,120.00	2,520,460.80	2,785,109.18	3,059,335.32	3,120,522.03	3,182,832.47	3,246,591.12	3,311,522.84	3,377,753.40	3,445,308.46	
Glycine	781,440.00	869,528.80	960,830.21	1,055,435.03	1,078,543.73	1,098,074.80	1,120,038.10	1,142,438.82	1,165,285.55	1,188,591.27	
BHT	3,245,814.00	3,611,705.76	3,990,934.86	4,383,888.45	4,471,566.22	4,560,897.54	4,652,217.50	4,745,281.85	4,840,167.08	4,936,870.42	
Co.Catalyst	181,500.00	201,980.00	223,185.80	245,139.05	250,041.83	255,042.67	260,143.52	265,348.39	270,653.32	276,068.38	
Utilities:											
Electricity	481.23	513.22	567.11	622.85	635.41	648.12	661.08	674.30	687.79	701.54	
Water	8.85	9.89	11.04	12.12	12.37	12.61	12.87	13.12	13.39	13.65	
Fuel-Oil	237,768.30	264,571.27	292,351.28	321,136.81	327,559.34	334,110.53	340,782.74	347,608.59	354,590.77	361,651.98	
H2SO4	217.80	242.35	267.80	294.17	300.05	306.05	312.17	318.42	324.78	331.28	
LPG	20,856.32	23,318.07	25,787.13	28,304.20	28,870.28	29,447.69	30,036.84	30,637.38	31,250.12	31,875.13	
NaOH	3,082.88	3,430.38	3,790.57	4,163.80	4,247.07	4,332.02	4,418.68	4,507.03	4,597.17	4,688.11	
N2	145.91	162.38	179.41	197.07	201.02	205.04	209.14	213.32	217.59	221.94	
Sub Total	29,214,201.40	32,507,438.65	35,820,719.70	39,457,528.03	40,248,679.61	41,051,813.20	41,872,845.47	42,710,088.38	43,584,300.34	44,435,588.35	
BIAYA TETAP (US \$):											
Biaya Manufaktur:											
- Personnel	825,000.00	841,500.00	858,330.00	875,498.80	893,008.53	910,868.68	929,084.00	947,665.88	966,618.89	985,951.37	
- Energy	135,000.00	137,700.00	140,454.00	143,263.08	146,129.34	149,050.91	152,031.93	155,072.57	158,174.02	161,337.50	
- Maintenance	300,000.00	306,000.00	312,120.00	318,362.40	324,729.65	331,224.24	337,848.73	344,605.70	351,497.81	358,527.77	
- Depreciation	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	
- Others	450,000.00	459,000.00	468,180.00	477,543.80	487,094.47	496,838.38	506,773.09	516,908.55	527,248.72	537,791.88	
Sub Total	3,910,000.00	3,944,200.00	3,979,084.00	4,014,885.68	4,050,958.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29	
Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.80	216,488.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51	
Biaya Alokasi (Corp.Serv.)	600,000.00	612,000.00	624,240.00	638,724.80	649,459.30	662,448.48	675,897.45	689,211.40	702,995.83	717,055.54	
TOTAL BIAYA (US \$)	33,924,201.40	37,287,838.65	40,732,123.70	44,321,181.11	45,183,584.33	46,022,858.02	46,899,913.14	47,793,286.40	48,705,165.39	49,635,268.70	
Biaya Per Unit (US\$/MT)	1028	1035	1044	1055	1075	1096	1117	1138	1160	1182	

Lampiran-9: Analisa sensitifitas terhadap tingkat keuntungan perusahaan setelah investasi apabila apabila harga propylene oxide naik 10%.

Tahun ke	1	2	3	4	5	6	7	8	9	10
Penjualan (US \$)	36,300,000.00	40,392,000.00	44,633,160.00	49,027,809.60	50,008,365.79	51,008,533.11	52,028,703.77	53,069,277.85	54,130,663.40	55,213,276.67
Biaya Variabel (US \$)	29,214,201.40	32,507,438.65	35,920,719.70	39,457,529.03	40,246,679.61	41,051,613.20	41,872,645.47	42,710,098.38	43,564,300.34	44,435,586.35
Biaya Tetap (US \$):										
Biaya Manufaktur	3,910,000.00	3,944,200.00	3,979,084.00	4,014,665.68	4,050,958.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29
Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,486.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51
Biaya Alokasi	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya	33,924,201.40	37,267,638.65	40,732,123.70	44,321,161.11	45,163,584.33	46,022,856.02	46,899,313.14	47,793,299.40	48,705,165.39	49,635,268.70
Laba Sebelum Pajak	2,375,798.60	3,124,361.35	3,901,036.30	4,706,648.49	4,844,781.46	4,985,677.09	5,129,390.63	5,275,978.44	5,425,498.01	5,578,007.97
Pajak (US \$)	712,739.58	937,308.41	1,170,310.69	1,411,994.55	1,453,434.44	1,495,703.13	1,538,817.19	1,582,793.53	1,627,649.40	1,673,402.39
Laba Setelah Pajak (\$)	1,663,059.02	2,187,052.95	2,730,725.41	3,294,653.94	3,391,347.02	3,489,973.96	3,590,573.44	3,693,184.91	3,797,848.61	3,904,605.58
ROS (%)	4.6	5.4	6.1	6.7	6.8	6.8	6.9	7.0	7.0	7.1

Tabel-10: Analisa sensitifitas terhadap NPV dan IRR apabila harga propylene oxide naik 10%.

	0	1	2	3	4	5	6	7	8	9	10
Nilai investasi awal	\$ 9,000,000										
Periode investasi (tahun)	10										
Tingkat suku bunga	15%										
Depresiasi											
- Total depresiasi	\$ 9,000,000										
- Depresiasi per tahun	\$ 900,000										
Cash flow											
Revenue:											
- Continuous Rx		36,300,000.00	40,392,000.00	44,633,160.00	49,027,809.60	50,008,365.79	51,008,533.11	52,028,703.77	53,069,277.65	54,130,663.40	55,213,276.67
-Conventional Rx		33,000,000.00	33,660,000.00	34,333,200.00	35,019,664.00	35,720,261.26	36,434,686.51	37,163,359.84	37,906,627.03	38,664,759.57	39,438,054.76
Incremental Revenue		\$3,300,000	\$6,732,000	\$10,299,860	\$14,007,946	\$14,288,105	\$14,573,867	\$14,865,344	\$15,162,651	\$15,465,904	\$15,775,222
Total Costs:											
- Continuous Rx (Excl.new deprt.)	0	\$33,424,201	\$36,767,639	\$40,232,124	\$43,821,161	\$44,863,584	\$45,522,856	\$46,399,313	\$47,293,299	\$48,205,165	\$49,135,269
- Conventional Rx	0	\$31,633,064	\$32,231,725	\$32,842,360	\$33,465,207	\$34,100,511	\$34,748,521	\$35,409,462	\$36,083,681	\$36,771,365	\$37,472,782
Incremental costs	0	\$1,791,137	\$4,535,913	\$7,389,764	\$10,355,954	\$10,563,073	\$10,774,335	\$10,989,821	\$11,209,618	\$11,433,810	\$11,662,486
Depreciation	0	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000
EBT		\$608,963	\$1,296,087	\$2,010,196	\$2,751,991	\$2,825,031	\$2,899,532	\$2,975,522	\$3,053,033	\$3,132,094	\$3,212,735
Tax (30%)		\$182,688.75	\$388,825.96	\$603,058.80	\$825,597.41	\$847,509.36	\$869,859.55	\$882,656.74	\$915,909.87	\$939,628.07	\$963,820.63
EAT		\$426,204	\$907,261	\$1,407,137	\$1,926,394	\$1,977,522	\$2,029,672	\$2,082,866	\$2,137,123	\$2,192,465	\$2,248,915
Cash In		\$1,326,204	\$1,807,261	\$2,307,137	\$2,826,394	\$2,877,522	\$2,929,672	\$2,982,866	\$3,037,123	\$3,092,465	\$3,148,915
Cash flow	\$	\$1,326,204	\$1,807,261	\$2,307,137	\$2,826,394	\$2,877,522	\$2,929,672	\$2,982,866	\$3,037,123	\$3,092,465	\$3,148,915
Discount Factor	(9,000,000)	0.8696	0.7561	0.6575	0.5718	0.4972	0.4323	0.3759	0.3269	0.2843	0.2472
Present Value		\$1,153,221	\$1,366,549	\$1,516,980	\$1,616,000	\$1,430,637	\$1,266,576	\$1,121,370	\$992,841	\$879,072	\$778,364

Lampiran-11: Analisa sensitifitas terhadap biaya produksi setelah investasi apabila harga polyol turun 10%.

	1	2	3	4	5	6	7	8	9	10
TAHUN ke										
BIAYA VARIABEL (US \$):										
Bahan Baku:										
Propylene Oxide	20,434,260.00	22,737,758.40	25,125,223.03	27,599,091.15	28,151,072.87	28,714,094.43	29,289,378.32	29,874,143.84	30,471,828.72	31,081,059.25
Ethylene Oxide	2,295,120.00	2,520,460.80	2,765,109.16	3,059,335.32	3,120,522.03	3,192,932.47	3,246,591.12	3,311,522.94	3,377,753.40	3,445,303.48
Glycerine	781,440.00	869,529.80	960,830.21	1,055,435.03	1,078,543.73	1,098,074.80	1,120,098.10	1,142,438.82	1,165,285.55	1,188,591.27
BHT	3,245,814.00	3,811,705.78	3,990,834.86	4,393,889.45	4,471,598.22	4,560,997.54	4,652,217.50	4,745,281.85	4,840,167.08	4,936,870.42
Co.Catalyst	181,500.00	201,980.00	223,165.80	245,139.05	250,041.83	255,042.67	260,143.52	265,348.39	270,653.32	276,068.38
Utilities:										
Electricity	461.23	513.22	567.11	622.85	635.41	648.12	661.08	674.30	687.79	701.54
Water	8.98	9.69	11.04	12.12	12.37	12.61	12.87	13.12	13.39	13.65
Fuel-Oil	237,768.30	264,571.27	292,351.28	321,136.61	327,559.34	334,110.53	340,792.74	347,608.59	354,560.77	361,651.98
H2SO4	217.80	242.35	267.80	294.17	300.05	306.05	312.17	318.42	324.78	331.28
LPG	20,958.32	23,318.67	25,787.13	28,304.20	28,870.28	29,447.89	30,036.84	30,637.38	31,250.12	31,875.13
NaOH	3,082.88	3,430.38	3,780.57	4,183.80	4,247.07	4,332.02	4,418.66	4,507.03	4,597.17	4,689.11
N2	145.91	162.38	179.41	197.07	201.02	205.04	209.14	213.32	217.59	221.94
Sub Total	27,170,775.40	30,233,682.81	33,408,187.40	36,697,619.91	37,431,572.31	38,180,203.76	38,943,807.83	39,722,883.99	40,517,137.87	41,327,480.42
BIAYA TETAP (US \$):										
Biaya Manufaktur:										
- Personnel	825,000.00	841,500.00	858,330.00	875,498.60	893,006.53	910,898.86	929,084.00	947,665.66	966,618.99	985,951.37
- Energy	135,000.00	137,700.00	140,454.00	143,263.06	146,128.34	149,050.91	152,031.93	155,072.57	158,174.02	161,337.50
- Maintenance	300,000.00	308,000.00	312,120.00	318,382.40	324,729.85	331,224.24	337,848.73	344,605.70	351,497.81	358,527.77
- Depreciation	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00
- Others	450,000.00	459,000.00	468,180.00	477,543.60	487,094.47	496,838.36	506,773.09	516,908.56	527,248.72	537,791.66
Sub Total	3,810,000.00	3,844,200.00	3,879,084.00	4,014,695.66	4,050,858.89	4,087,878.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29
Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,488.43	220,816.16	225,232.46	229,737.13	234,331.86	239,018.51
Biaya Alokasi (Corp. Serv.)	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya (US \$)	31,880,775.40	34,995,882.81	38,219,801.40	41,581,251.99	42,348,477.03	43,151,446.56	43,970,475.51	44,805,885.02	45,658,002.72	46,527,162.77
Biaya Per Unit (US\$/MT)	968	872	960	990	1008	1027	1047	1067	1087	1108

Lampiran-12: Analisa sensitifitas terhadap tingkat keuntungan setelah investasi apabila harga polyol turun 10%.

Tahun ke	1	2	3	4	5	6	7	8	9	10
Penjualan (US \$)	32,670,000.00	36,352,800.00	40,169,844.00	44,125,028.64	45,007,529.21	45,907,879.80	46,825,833.39	47,762,350.06	48,717,597.06	49,691,949.00
Biaya Variabel (US \$)	27,170,775.40	30,233,662.81	33,408,197.40	36,697,819.91	37,431,572.31	38,180,203.76	38,943,807.83	39,722,683.99	40,517,137.67	41,327,480.42
Biaya Tetap (US \$):										
Biaya Manufaktur:	3,910,000.00	3,944,200.00	3,979,084.00	4,014,665.68	4,050,958.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29
Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,486.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51
Biaya Alokasi	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya (US \$)	31,880,775.40	34,993,862.81	38,219,601.40	41,581,251.99	42,348,477.03	43,151,446.58	43,970,475.51	44,805,885.02	45,658,002.72	46,527,162.77
Laba Sebelum Pajak (US\$)	789,224.60	1,358,937.19	1,950,242.60	2,563,776.65	2,659,052.18	2,756,233.22	2,855,357.89	2,956,465.04	3,059,594.34	3,164,786.23
Pajak (US \$)	236,767.38	407,681.16	585,072.78	769,132.99	797,715.65	826,869.97	856,607.37	886,939.51	917,878.30	949,435.87
Laba Setelah Pajak (US\$)	552,457.22	951,256.04	1,365,169.82	1,794,643.65	1,861,336.52	1,929,363.26	1,998,750.52	2,069,525.53	2,141,716.04	2,215,350.36
ROS (%)	1.7	2.6	3.4	4.1	4.1	4.2	4.3	4.3	4.4	4.5

Lampiran-13: Analisa sensitifitas terhadap NPV dan IRR apabila harga polyolol turun 10%.

	0	1	2	3	4	5	6	7	8	9	10
Nilai investasi awal	\$										
Periode investasi (tahun)	9,000,000										
Tingkat suku bunga	10										
	15%										
Depresiasi	\$										
- Total depresiasi	9,000,000										
- Depresiasi pertahun	\$										
	900,000										
Cash flow											
Revenue:											
- Continuous Rx		32,670,000.00	38,352,800.00	40,169,844.00	44,125,028.64	45,007,529.21	45,907,879.80	48,825,833.39	47,782,350.06	48,717,587.08	49,891,948.00
-Conventional Rx		28,700,000.00	30,284,000.00	30,869,860.00	31,517,877.60	32,148,235.15	32,781,189.88	33,447,023.85	34,115,864.33	34,788,283.82	35,484,248.29
Tambahan revenue		\$2,870,000	\$8,068,800	\$8,298,964	\$12,607,151	\$12,859,284	\$13,116,480	\$13,378,610	\$13,646,388	\$13,919,313	\$14,187,700
Total Costs:											
- Continuous Rx (Excl. new depr.)	0	\$31,380,775	\$34,483,863	\$37,719,601	\$41,081,252	\$41,848,477	\$42,651,447	\$43,470,476	\$44,305,885	\$45,158,003	\$46,027,183
- Conventional Rx	0	\$28,775,404	\$30,336,912	\$30,909,650	\$31,493,843	\$32,088,720	\$32,697,514	\$33,317,465	\$33,948,814	\$34,594,810	\$35,252,707
Tambahan biaya	0	\$1,605,371	\$4,156,951	\$6,808,951	\$9,567,408	\$8,758,757	\$8,953,832	\$10,153,011	\$10,359,071	\$10,563,192	\$10,774,458
Depresiasi	0	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000
EBT		\$484,629	\$1,001,649	\$1,560,013	\$2,139,742	\$2,200,537	\$2,282,548	\$2,325,769	\$2,360,315	\$2,458,121	\$2,523,244
Tax (30%)		\$138,388.55	\$300,554.75	\$468,003.85	\$641,922.88	\$680,181.14	\$678,764.36	\$697,739.85	\$717,064.44	\$738,836.33	\$756,873.05
EAT		\$325,240	\$701,294	\$1,092,009	\$1,497,820	\$1,540,376	\$1,583,784	\$1,628,029	\$1,673,220	\$1,718,285	\$1,766,270
Cash In		\$1,225,240	\$1,601,294	\$1,992,008	\$2,387,820	\$2,440,376	\$2,483,784	\$2,528,059	\$2,573,220	\$2,618,285	\$2,668,270
Cash flow	\$	\$1,225,240	\$1,601,294	\$1,992,008	\$2,387,820	\$2,440,376	\$2,483,784	\$2,528,059	\$2,573,220	\$2,618,285	\$2,668,270
Discount Factor		0.8898	0.7581	0.6575	0.5718	0.4972	0.4323	0.3759	0.3289	0.2843	0.2472
Present Value		\$1,065,428	\$1,210,809	\$1,308,778	\$1,370,961	\$1,213,298	\$1,073,808	\$960,391	\$841,190	\$744,564	\$659,081



Lampiran-14: Analisa sensitifitas terhadap biaya produksi setelah investasi apabila produksi hanya 90% dari rencana.

Tahun ke	1	2	3	4	5	6	7	8	9	10
BIAYA VARIABEL (US \$):										
Bahan Baku:										
Propylene Oxide	18,390,834.00	20,463,982.5	22,612,700.73	24,839,182.03	25,335,965.6	25,842,684.99	26,359,538.69	26,886,729.4	27,424,464.05	27,972,953.33
Etylene Oxide	2,038,608.00	2,268,414.7	2,506,598.27	2,753,401.79	2,808,469.8	2,864,639.22	2,921,932.00	2,980,370.6	3,039,978.06	3,100,777.62
Glycerine	703,296.00	782,576.6	864,747.19	949,891.53	968,889.3	988,267.14	1,008,032.49	1,028,193.1	1,048,757.00	1,069,732.14
BHT	2,921,232.60	3,250,535.1	3,591,841.38	3,945,499.61	4,024,409.6	4,104,897.79	4,186,996.75	4,270,735.6	4,356,150.37	4,443,273.38
Co.Catalyst	163,350.00	181,764.0	200,849.22	220,625.14	225,037.6	229,538.40	234,129.17	238,811.7	243,587.99	248,459.75
Utilitas:										
Electricity	415.11	461.9	510.40	560.65	571.8	583.31	594.97	606.8	619.01	631.39
Water	8.08	8.9	9.93	10.91	11.1	11.35	11.58	11.8	12.05	12.29
Fuel-Oil	213,991.47	238,114.1	263,116.13	289,022.95	294,803.4	300,699.48	306,713.47	312,847.7	319,104.69	325,486.78
H2SO4	196.02	218.1	241.02	264.75	270.0	275.45	280.96	286.5	292.31	298.15
LPG	18,860.69	20,966.8	23,190.42	25,473.78	25,983.2	26,502.92	27,032.98	27,573.6	28,125.11	28,687.61
NaOH	2,774.57	3,087.3	3,411.52	3,747.42	3,822.3	3,898.81	3,976.79	4,056.3	4,137.45	4,220.20
N2	131.32	146.1	161.47	177.37	180.9	184.53	188.22	191.9	195.63	199.74
Sub Total	24,453,697.86	27,210,296.5	30,067,377.66	33,027,857.92	33,688,415.0	34,362,183.38	35,049,427.05	35,750,415.5	36,465,423.90	37,194,732.38
BIAYA TETAP (US \$):										
Biaya Manufaktur:										
- Personnel	825,000.00	841,500.0	858,330.00	875,496.60	893,006.5	910,866.66	929,084.00	947,665.6	966,618.99	985,951.37
- Energy	135,000.00	137,700.0	140,454.00	143,263.08	146,128.3	149,050.91	152,031.93	155,072.5	158,174.02	161,337.50
- Maintenance	300,000.00	306,000.0	312,120.00	318,362.40	324,729.6	331,224.24	337,848.73	344,605.7	351,497.81	358,527.77
- Depreciation	2,200,000.00	2,200,000.0	2,200,000.00	2,200,000.00	2,200,000.0	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00	2,200,000.00
- Others	450,000.00	459,000.0	468,180.00	477,543.60	487,094.4	496,836.36	506,773.09	516,908.5	527,246.72	537,791.66
Sub Total	3,910,000.00	3,944,200.0	3,979,084.00	4,014,665.68	4,050,958.9	4,087,978.17	4,125,737.74	4,164,252.4	4,203,537.54	4,243,608.29
Biaya Pemasaran										
	200,000.00	204,000.0	208,080.00	212,241.60	216,486.4	220,816.16	225,232.48	229,737.1	234,331.88	239,018.51
Biaya Alokasi (Corp.Serv.)										
	600,000.00	612,000.0	624,240.00	636,724.80	649,459.3	662,448.48	675,697.45	689,211.4	702,995.63	717,055.54
Total Biaya (US \$)	29,163,697.86	31,970,496.5	34,878,781.66	37,891,490.00	38,605,319.8	39,333,426.20	40,076,094.72	40,833,616.6	41,606,286.95	42,394,414.73
Biaya Per Unit (US\$/MT)	982	98	894	1002	102	1041	1060	108	1101	1122

Lampiran-15: Analisa sensitifitas terhadap tingkat keuntungan setelah investasi
Apabila jumlah produksi hanya 90% dari rencana.

Tahun ke	1	2	3	4	5	6	7	8	9	10
Penjualan (US \$)	32,670,000.00	36,352,800.00	40,169,844.00	44,125,028.64	45,007,529.21	45,907,679.80	46,825,833.39	47,762,350.06	48,717,597.06	49,691,949.00
Biaya Variabel (US \$)	24,453,697.86	27,210,296.53	30,067,377.66	33,027,857.92	33,688,415.08	34,362,183.38	35,049,427.05	35,750,415.59	36,465,423.90	37,194,732.38
Biaya Tetap (US \$):										
Biaya Manufaktur:	3,910,000.00	3,944,200.00	3,979,084.00	4,014,665.68	4,050,958.99	4,087,978.17	4,125,737.74	4,164,252.49	4,203,537.54	4,243,608.29
Biaya Pemasaran	200,000.00	204,000.00	208,080.00	212,241.60	216,486.43	220,816.16	225,232.48	229,737.13	234,331.88	239,018.51
Biaya Alokasi	600,000.00	612,000.00	624,240.00	636,724.80	649,459.30	662,448.48	675,697.45	689,211.40	702,995.63	717,055.54
Total Biaya (US \$)	29,163,697.86	31,970,496.53	34,878,781.66	37,891,490.00	38,605,319.80	39,333,426.20	40,076,094.72	40,833,616.62	41,606,288.95	42,394,414.73
Laba Sebelum Pajak (US\$)	3,506,302.14	4,382,303.47	5,291,062.34	6,233,538.64	6,402,209.41	6,574,253.60	6,749,738.67	6,928,733.44	7,111,308.11	7,297,534.27
Pajak (US \$)	1,051,890.64	1,314,691.04	1,587,318.70	1,870,061.59	1,920,662.82	1,972,276.08	2,024,921.60	2,078,620.03	2,133,392.43	2,189,260.28
Laba Setelah Pajak (US\$)	2,454,411.50	3,067,612.43	3,703,743.64	4,363,477.05	4,481,546.59	4,601,977.52	4,724,817.07	4,850,113.41	4,977,915.68	5,108,273.99
ROS (%)	7.5	8.4	9.2	9.9	10.0	10.0	10.1	10.2	10.2	10.3

Lampiran-16: Analisa sensitifitas terhadap NPV dan IRR apabila jumlah produksi hanya 90% dari rencana.

	-1	0	1	2	3	4	5	6	7	8	9	10
Nilai investasi awal		\$										
Periode investasi		9,000,000										
Tingkat suku bunga		10										
		15%										
Depresiasi		\$										
~ Total depresiasi		9,000,000										
- Depresiasi per tahun		900,000										
Cash flow												
Revenue:												
- Continuous Rx		32,670,000.00	36,352,800.00	40,169,644.00	44,125,028.64	45,007,529.21	45,907,679.80	46,825,833.39	47,762,350.06	48,717,597.06	49,691,949.00	
- Conventional Rx		33,000,000.00	33,660,000.00	34,333,200.00	35,019,864.00	35,720,261.28	36,434,666.51	37,163,359.84	37,906,627.03	38,664,759.57	39,438,054.76	
Tambahan Revenue		-\$330,000	\$2,692,800	\$5,836,644	\$9,105,165	\$9,287,268	\$9,473,013	\$9,662,474	\$9,855,723	\$10,052,837	\$10,253,894	
Total Costs:												
- Continuous Rx (Excl new depr.)	0	\$28,663,698	\$31,470,497	\$34,378,782	\$37,391,490	\$38,105,320	\$38,833,426	\$39,576,095	\$40,333,617	\$41,106,289	\$41,894,415	
- Conventional Rx	0	\$29,775,404	\$30,336,912	\$30,909,650	\$31,493,843	\$32,089,720	\$32,697,514	\$33,317,465	\$33,949,814	\$34,594,810	\$35,252,707	
Tambahan biaya	0	-\$1,111,706	\$1,133,585	\$3,469,131	\$5,897,647	\$6,015,600	\$6,135,912	\$6,258,630	\$6,383,803	\$6,511,479	\$6,641,708	
Depresiasi	0	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000	\$ 900,000
EBT		-\$118,294	\$659,215	\$1,487,513	\$2,307,518	\$2,371,668	\$2,437,102	\$2,503,844	\$2,571,920	\$2,641,359	\$2,712,166	
Tax (30%)		-\$35,486.19	\$197,764.64	\$440,253.77	\$692,255.36	\$711,500.47	\$731,130.48	\$751,153.09	\$771,576.15	\$792,407.67	\$813,655.82	
EAT		-\$82,806	\$461,451	\$1,027,259	\$1,615,263	\$1,660,168	\$1,705,971	\$1,752,691	\$1,800,344	\$1,848,951	\$1,898,530	
Cash in		\$817,194	\$1,361,451	\$1,927,259	\$2,515,263	\$2,560,168	\$2,605,971	\$2,652,691	\$2,700,344	\$2,748,951	\$2,798,530	
Cash flow	\$	\$817,194	\$1,361,451	\$1,927,259	\$2,515,263	\$2,560,168	\$2,605,971	\$2,652,691	\$2,700,344	\$2,748,951	\$2,798,530	
Discount Factor		0.8696	0.7561	0.6575	0.5718	0.4972	0.4323	0.3759	0.3269	0.2843	0.2472	
Present Value		\$710,604	\$1,029,452	\$1,267,204	\$1,438,110	\$1,272,856	\$1,126,633	\$987,245	\$882,747	\$781,424	\$691,754	

NPV \$1,185,129
IRR 15.00%

Lampiran 17 : Struktur organisasi PT.X-Indonesia

