

Electricity
Conservation
Potential
Review,
1988 – 2010:

The Industrial Sector

Phase I: Unconstrained Potential

**Volume 2:
Appendices**

ELECTRICITY CONSERVATION POTENTIAL
IN BC HYDRO'S SERVICE AREA

COLLABORATIVE COMMITTEE FOR
THE 1991-1994 CONSERVATION POTENTIAL REVIEW

VANCOUVER, B.C. - FEBRUARY 1993

1991-1994 ELECTRICITY CONSERVATION POTENTIAL REVIEW:

THE BRITISH COLUMBIA INDUSTRIAL SECTOR

**VOLUME II
Technical Report**

Prepared For

BC Hydro

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**This report was completed in February 1992,
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of all Phase I reports.**

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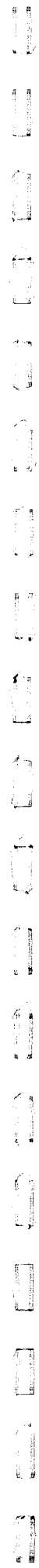
This report (which should be read in conjunction with Volume I) contains the results for all high and low growth model simulations by industry and sub-product, for the conservation potential review study. For example, in the pulp and paper industry there are report tables of the industry total as well as for chemical pulp, mechanical pulp and paper products. A maximum of three sub-products are reported per industry, however, in some cases there are only one or two sub-products.

1. Product Categories

- | | |
|------------------------|---|
| a. Pulp and Paper | - Industry Total
- Chemical Pulp
- Mechanical Pulp
- Paper Products |
| b. Mining | - Industry Total
- Coal Mining
- Metal Mining |
| c. Wood Products | - Industry Total
- Saw Mills
- Structural/Veneer
- Remanufacturing |
| d. Chemicals | - Industry Total
- Electrolysis
- Hydrogen Peroxide
- Ammonia/Oxygen |
| e. Petroleum Refining | - Industry Total |
| f. Other Manufacturing | - Industry Total
- Agriculture
- Other Manufacturing |

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PART 1

PULP AND PAPER

Table 1: High Growth Scenario, Electricity Demand

Industry: PAPER

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand				% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	10426	13729	15883		
Natural	10426	12712	14355	7.4%	9.6%
Econ 1	10426	7952	9408	42.1%	40.8%
Econ 2	10426	7885	9327	42.6%	41.3%
Econ 3	10426	7837	9268	42.9%	41.6%
Econ 4	10426	7748	9159	43.6%	42.3%
Econ 5	10426	7643	9033	44.3%	43.1%
Tech Pot	10426	7718	9154	43.8%	42.4%
Tech Soc	10426	7347	8701	46.5%	45.2%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry: Paper

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping			% FROM FROZEN			Conveyance			% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	3888.9	4211.0	4579.4			Frozen	501.9	630.2	701.8		
Natural	3888.9	3738.6	3853.5	11.2%	15.9%	Natural	501.9	602.1	659.8	4.5%	6.0%
Econ 1	3888.9	1362.9	1412.2	67.6%	69.2%	Econ 1	501.9	408.8	455.4	35.1%	35.1%
Econ 2	3888.9	1342.1	1390.7	68.1%	69.6%	Econ 2	501.9	405.6	451.9	35.6%	35.6%
Econ 3	3888.9	1328.2	1376.3	68.5%	69.9%	Econ 3	501.9	403.4	449.5	36.0%	35.9%
Econ 4	3888.9	1300.4	1347.4	69.1%	70.6%	Econ 4	501.9	399.0	444.6	36.7%	36.6%
Econ 5	3888.9	1265.6	1311.4	69.9%	71.4%	Econ 5	501.9	393.6	438.5	37.6%	37.5%
Tech Pot	3888.9	1251.5	1304.9	70.3%	71.5%	Tech Pot	501.9	407.0	454.0	35.4%	35.3%
Tech Soc	3888.9	1126.3	1174.4	73.3%	74.4%	Tech Pot	501.9	386.7	431.3	38.6%	38.5%

Air Displacement			% FROM FROZEN			Process drives			% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	1149.7	1182.2	1281.2			Frozen	4152.0	6112.1	7063.4		
Natural	1149.7	1056.6	1048.1	10.6%	18.2%	Natural	4152.0	5900.5	6795.4	3.5%	3.8%
Econ 1	1149.7	578.1	597.0	51.1%	53.4%	Econ 1	4152.0	4479.8	5225.4	26.7%	26.0%
Econ 2	1149.7	573.6	592.4	51.5%	53.8%	Econ 2	4152.0	4457.2	5198.8	27.1%	26.4%
Econ 3	1149.7	570.6	589.3	51.7%	54.0%	Econ 3	4152.0	4439.6	5177.1	27.4%	26.7%
Econ 4	1149.7	564.6	583.1	52.2%	54.5%	Econ 4	4152.0	4410.5	5141.4	27.8%	27.2%
Econ 5	1149.7	557.3	575.5	52.9%	55.1%	Econ 5	4152.0	4381.2	5107.2	28.3%	27.7%
Tech Pot	1149.7	572.5	591.1	51.6%	53.9%	Tech Pot	4152.0	4367.9	5091.2	28.5%	27.9%
Tech Soc	1149.7	543.9	561.6	54.0%	56.2%	Tech Soc	4152.0	4280.5	4989.4	30.0%	29.4%

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	212.6	267.1	299.9		
Natural	212.6	233.8	254.8	12.5%	15.0%
Econ 1	212.6	118.0	129.1	55.8%	56.9%
Econ 2	212.6	115.2	126.1	56.9%	58.0%
Econ 3	212.6	113.3	124.0	57.6%	58.6%
Econ 4	212.6	109.7	120.1	58.9%	60.0%
Econ 5	212.6	105.2	115.2	60.6%	61.6%
Tech Pot	212.6	116.4	127.4	56.4%	57.5%
Tech Soc	212.6	98.9	108.3	63.0%	63.9%

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	9905.07	12402.63	13925.55
Pump	3888.89	4211.00	4579.35
Air Displacement	1149.68	1182.15	1281.16
Compression	212.60	267.08	299.92
Conveyance	501.89	630.25	701.76
Other	4152.01	6112.14	7063.36
Electrolysis	.00	.00	.00
Process Heat	.00	472.65	973.10
Light	417.06	680.54	784.01
Other	104.26	173.09	199.92
Total	10426.39	13728.90	15882.58

Natural Run			
Technology	1988	2000	2010
Machine Drive	9905.07	11531.46	12611.51
Pump	3888.89	3738.60	3853.46
Air Displacement	1149.68	1056.55	1048.06
Compression	212.60	233.76	254.78
Conveyance	501.89	602.06	659.77
Other	4152.01	5900.50	6795.44
Electrolysis	.00	.00	.00
Process Heat	.00	478.72	980.73
Light	417.06	528.30	562.47
Other	104.26	173.09	199.92
Total	10426.39	12711.57	14354.62

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6947.53	7819.18
Pump	3888.89	1362.91	1412.18
Air Displacement	1149.68	578.07	596.99
Compression	212.60	117.98	129.14
Conveyance	501.89	408.79	455.44
Other	4152.01	4479.78	5225.43
Electrolysis	.00	.00	.00
Process Heat	.00	474.90	977.42
Light	417.06	356.65	411.94
Other	104.26	173.09	199.92
Total	10426.39	7952.17	9408.47

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6893.64	7759.77
Pump	3888.89	1342.11	1390.65
Air Displacement	1149.68	573.59	592.37
Compression	212.60	115.18	126.07
Conveyance	501.89	405.59	451.91
Other	4152.01	4457.18	5198.77
Electrolysis	.00	.00	.00
Process Heat	.00	467.83	962.85
Light	417.06	351.30	405.76
Other	104.26	171.79	198.42
Total	10426.39	7884.56	9326.80

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6855.17	7716.19
Pump	3888.89	1328.21	1376.26
Air Displacement	1149.68	570.59	589.27
Compression	212.60	113.32	124.04
Conveyance	501.89	403.43	449.53
Other	4152.01	4439.63	5177.08
Electrolysis	.00	.00	.00
Process Heat	.00	463.12	953.14
Light	417.06	347.74	401.64
Other	104.26	170.92	197.42
Total	10426.39	7836.95	9268.39

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6784.31	7636.53
Pump	3888.89	1300.41	1347.40
Air Displacement	1149.68	564.65	583.13
Compression	212.60	109.68	120.06
Conveyance	501.89	399.04	444.57
Other	4152.01	4410.52	5141.36
Electolysis	.00	.00	.00
Process Heat	.00	453.69	933.70
Light	417.06	340.60	393.41
Other	104.26	169.19	195.42
Total	10426.39	7747.79	9159.06

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6702.88	7547.79
Pump	3888.89	1265.59	1311.36
Air Displacement	1149.68	557.29	575.53
Compression	212.60	105.20	115.16
Conveyance	501.89	393.56	438.50
Other	4152.01	4381.25	5107.24
Electolysis	.00	.00	.00
Process Heat	.00	441.88	909.36
Light	417.06	331.69	383.11
Other	104.26	167.03	192.92
Total	10426.39	7643.48	9033.18

Technological Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6715.29	7568.56
Pump	3888.89	1251.49	1304.86
Air Displacement	1149.68	572.52	591.13
Compression	212.60	116.36	127.37
Conveyance	501.89	407.02	453.98
Other	4152.01	4367.90	5091.22
Electolysis	.00	.00	.00
Process Heat	.00	472.65	973.10
Light	417.06	356.65	411.94
Other	104.26	173.09	199.92
Total	10426.39	7717.67	9153.52

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	9905.07	6436.35	7264.89
Pump	3888.89	1126.34	1174.37
Air Displacement	1149.68	543.89	561.57
Compression	212.60	98.91	108.27
Conveyance	501.89	386.67	431.28
Other	4152.01	4280.54	4989.40
Electolysis	.00	.00	.00
Process Heat	.00	425.38	875.79
Light	417.06	320.99	370.75
Other	104.26	164.43	189.92
Total	10426.39	7347.15	8701.35

Table 4: High Growth Scenario, Electricity Demand for Process 1

 Industry: PAPER Process: Chemical Pulp
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	5207	4433	4567		
Natural	5207	3973	3895	10.4%	14.7%
Econ 1	5207	1975	1980	55.5%	56.6%
Econ 2	5207	1954	1960	55.9%	57.1%
Econ 3	5207	1940	1947	56.2%	57.4%
Econ 4	5207	1914	1920	56.8%	58.0%
Econ 5	5207	1881	1887	57.6%	58.7%
Tech Pot	5207	1835	1844	58.6%	59.6%
Tech Soc	5207	1722	1732	61.2%	62.1%

Table 5: High Growth, Electrical Demand in Auxiliary Units for Process 1

 Industry: Paper Process: Chemical Pulp
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping					% FROM FROZEN					Conveyance					% FROM FROZEN				
Run	1988	2000	2010		2000	2010				Run	1988	2000	2010		2000	2010			
Frozen	2837.0	2423.8	2494.0							Frozen	305.8	272.4	278.6						
Natural	2837.0	2166.3	2119.5	10.6%	15.0%					Natural	305.8	254.6	254.6	6.5%	8.6%				
Econ 1	2837.0	796.2	781.6	67.2%	68.7%					Econ 1	305.8	174.6	178.8	35.9%	35.8%				
Econ 2	2837.0	784.1	769.7	67.7%	69.1%					Econ 2	305.8	173.3	177.4	36.4%	36.3%				
Econ 3	2837.0	776.0	761.8	68.0%	69.5%					Econ 3	305.8	172.4	176.5	36.7%	36.7%				
Econ 4	2837.0	759.9	746.0	68.6%	70.1%					Econ 4	305.8	170.7	174.7	37.3%	37.3%				
Econ 5	2837.0	739.6	726.1	69.5%	70.9%					Econ 5	305.8	168.5	172.5	38.2%	38.1%				
Tech Pot	2837.0	679.6	668.1	72.0%	73.2%					Tech Pot	305.8	172.9	177.0	36.5%	36.5%				
Tech Soc	2837.0	611.6	601.3	74.8%	75.9%					Tech Soc	305.8	164.2	168.1	39.7%	39.7%				

Air Displacement					% FROM FROZEN					Process drives					% FROM FROZEN				
Run	1988	2000	2010		2000	2010				Run	1988	2000	2010		2000	2010			
Frozen	914.6	782.4	813.2							Frozen	1036.2	855.7	878.6						
Natural	914.6	698.7	664.8	10.7%	18.2%					Natural	1036.2	767.5	769.8	10.3%	12.4%				
Econ 1	914.6	383.2	379.6	51.0%	53.3%					Econ 1	1036.2	576.9	596.4	32.6%	32.1%				
Econ 2	914.6	380.3	376.7	51.4%	53.7%					Econ 2	1036.2	573.9	593.2	32.9%	32.5%				
Econ 3	914.6	378.3	374.7	51.7%	53.9%					Econ 3	1036.2	571.8	591.2	33.2%	32.7%				
Econ 4	914.6	374.3	370.8	52.2%	54.4%					Econ 4	1036.2	568.3	587.5	33.6%	33.1%				
Econ 5	914.6	369.5	366.0	52.8%	55.0%					Econ 5	1036.2	564.0	583.2	34.1%	33.6%				
Tech Pot	914.6	380.6	377.1	51.4%	53.6%					Tech Pot	1036.2	559.1	578.8	34.7%	34.1%				
Tech Soc	914.6	361.6	358.2	53.8%	55.9%					Tech Soc	1036.2	547.9	567.2	36.0%	35.4%				

Compression					% FROM FROZEN				
Run	1988	2000	2010		2000	2010			
Frozen	113.9	99.0	102.5						
Natural	113.9	86.3	86.8	12.8%	15.4%				
Econ 1	113.9	43.6	44.1	55.9%	57.0%				
Econ 2	113.9	42.6	43.0	56.9%	58.0%				
Econ 3	113.9	41.9	42.3	57.6%	58.7%				
Econ 4	113.9	40.6	41.0	59.0%	60.0%				
Econ 5	113.9	38.9	39.3	60.7%	61.6%				
Tech Pot	113.9	43.2	43.6	56.4%	57.5%				
Tech Soc	113.9	36.7	37.1	62.9%	63.9%				

Table 6: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Chemical Pulp
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	5207.43	4433.41	4566.89
Pump	2836.97	2423.84	2493.96
Air Displacement	914.62	782.45	813.18
Compression	113.86	98.96	102.54
Conveyance	305.80	272.41	278.62
Other	1036.19	855.74	878.59
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	4433.41	4566.89

Natural Run			
Technology	1988	2000	2010
Machine Drive	5207.43	3973.45	3895.35
Pump	2836.97	2166.27	2119.47
Air Displacement	914.62	698.72	664.78
Compression	113.86	86.34	86.77
Conveyance	305.80	254.63	254.56
Other	1036.19	767.49	769.76
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	3973.45	3895.35

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1974.64	1980.46
Pump	2836.97	796.21	781.63
Air Displacement	914.62	383.22	379.62
Compression	113.86	43.64	44.08
Conveyance	305.80	174.65	178.76
Other	1036.19	576.93	596.37
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1974.64	1980.46

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1954.16	1960.10
Pump	2836.97	784.11	769.75
Air Displacement	914.62	380.25	376.68
Compression	113.86	42.61	43.04
Conveyance	305.80	173.32	177.40
Other	1036.19	573.87	593.23
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1954.16	1960.10

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1940.49	1946.52
Pump	2836.97	776.03	761.81
Air Displacement	914.62	378.27	374.71
Compression	113.86	41.92	42.35
Conveyance	305.80	172.44	176.50
Other	1036.19	571.84	591.15
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1940.49	1946.52

Table 6: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Chemical Pulp
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	5207.43	1913.77	1919.99	Machine Drive	5207.43	1880.58	1887.06
Pump	2836.97	759.91	746.00	Pump	2836.97	739.64	726.10
Air Displacement	914.62	374.34	370.83	Air Displacement	914.62	369.48	366.01
Compression	113.86	40.58	40.99	Compression	113.86	38.93	39.33
Conveyance	305.80	170.68	174.70	Conveyance	305.80	168.48	172.45
Other	1036.19	568.25	587.48	Other	1036.19	564.04	583.17
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	5207.43	1913.77	1919.99	Total	5207.43	1880.58	1887.06

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	5207.43	1835.40	1844.47	Machine Drive	5207.43	1722.11	1731.84
Pump	2836.97	679.57	668.09	Pump	2836.97	611.61	601.28
Air Displacement	914.62	380.64	377.06	Air Displacement	914.62	361.61	358.21
Compression	113.86	43.17	43.60	Compression	113.86	36.69	37.06
Conveyance	305.80	172.89	176.96	Conveyance	305.80	164.25	168.11
Other	1036.19	559.13	578.75	Other	1036.19	547.95	567.18
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	5207.43	1835.40	1844.47	Total	5207.43	1722.11	1731.84

Table 7: High Growth Scenario, Electricity Demand for Process 2

Industry: PAPER Process: Mechanical Pulp
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	3450	5865	6893		
Natural	3450	5537	6395	5.6%	7.2%
Econ 1	3450	3794	4465	35.3%	35.2%
Econ 2	3450	3773	4440	35.7%	35.6%
Econ 3	3450	3759	4425	35.9%	35.8%
Econ 4	3450	3734	4395	36.3%	36.2%
Econ 5	3450	3704	4360	36.9%	36.7%
Tech Pot	3450	3880	4568	33.9%	33.7%
Tech Soc	3450	3769	4439	35.7%	35.6%

Table 8: High Growth, Electrical Demand in Auxiliary Units

Industry: Paper Process: Mechanical Pulp
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	523.4	897.3	1061.1			Frozen	191.3	349.1	412.9		
Natural	523.4	780.3	867.8	13.0%	18.2%	Natural	191.3	338.8	395.1	3.0%	4.3%
Econ 1	523.4	276.1	311.3	69.2%	70.7%	Econ 1	191.3	228.1	269.6	34.7%	34.7%
Econ 2	523.4	271.8	306.5	69.7%	71.1%	Econ 2	191.3	226.3	267.4	35.2%	35.2%
Econ 3	523.4	269.0	303.3	70.0%	71.4%	Econ 3	191.3	225.0	266.0	35.5%	35.6%
Econ 4	523.4	263.2	296.7	70.7%	72.0%	Econ 4	191.3	222.5	262.9	36.3%	36.3%
Econ 5	523.4	255.9	288.6	71.5%	72.8%	Econ 5	191.3	219.2	259.2	37.2%	37.2%
Tech Pot	523.4	283.1	319.4	68.5%	69.9%	Tech Pot	191.3	228.1	270.0	34.7%	34.6%
Tech Soc	523.4	254.7	287.5	71.6%	72.9%	Tech Soc	191.3	216.7	256.5	37.9%	37.9%
Air Displacement						Process drives					
						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	98.4	167.8	198.7			Frozen	2621.1	4424.6	5188.4		
Natural	98.4	148.3	159.7	11.6%	19.6%	Natural	2621.1	4246.3	4946.2	4.0%	4.7%
Econ 1	98.4	79.3	89.5	52.7%	54.9%	Econ 1	2621.1	3199.4	3781.9	27.7%	27.1%
Econ 2	98.4	78.7	88.8	53.1%	55.3%	Econ 2	2621.1	3184.9	3764.9	28.0%	27.4%
Econ 3	98.4	78.3	88.4	53.3%	55.5%	Econ 3	2621.1	3176.1	3754.5	28.2%	27.6%
Econ 4	98.4	77.5	87.4	53.8%	56.0%	Econ 4	2621.1	3160.5	3736.0	28.6%	28.0%
Econ 5	98.4	76.4	86.2	54.4%	56.6%	Econ 5	2621.1	3142.2	3714.6	29.0%	28.4%
Tech Pot	98.4	77.1	87.1	54.0%	56.2%	Tech Pot	2621.1	3280.6	3879.0	25.9%	25.2%
Tech Soc	98.4	73.3	82.7	56.3%	58.4%	Tech Soc	2621.1	3214.9	3801.5	27.3%	26.7%
Compression											
						% FROM FROZEN					
Run	1988	2000	2010	2000	2010						
Frozen	15.7	26.7	31.6								
Natural	15.7	23.0	26.2	13.9%	17.1%						
Econ 1	15.7	11.2	12.9	58.0%	59.1%						
Econ 2	15.7	10.9	12.6	59.0%	60.1%						
Econ 3	15.7	10.8	12.4	59.7%	60.7%						
Econ 4	15.7	10.4	12.0	61.0%	62.1%						
Econ 5	15.7	10.0	11.5	62.7%	63.7%						
Tech Pot	15.7	10.8	12.4	59.7%	60.7%						
Tech Soc	15.7	9.1	10.5	65.7%	66.6%						

Table 9: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Mechanical Pulp
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	3449.83	5865.45	6892.60
Pump	523.37	897.29	1061.05
Air Displacement	98.44	167.76	198.66
Compression	15.68	26.69	31.56
Conveyance	191.27	349.11	412.89
Other	2621.07	4424.60	5188.43
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	5865.45	6892.60

Natural Run Technology	1988	2000	2010
Machine Drive	3449.83	5536.58	6394.92
Pump	523.37	780.29	867.77
Air Displacement	98.44	148.26	159.72
Compression	15.68	22.97	26.17
Conveyance	191.27	338.77	395.08
Other	2621.07	4246.28	4946.19
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	5536.58	6394.92

Economic 1 Run Technology	1988	2000	2010
Machine Drive	3449.83	3794.15	4465.22
Pump	523.37	276.13	311.32
Air Displacement	98.44	79.33	89.52
Compression	15.68	11.21	12.91
Conveyance	191.27	228.09	269.57
Other	2621.07	3199.39	3781.90
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3794.15	4465.22

Economic 2 Run Technology	1988	2000	2010
Machine Drive	3449.83	3772.67	4440.29
Pump	523.37	271.84	306.53
Air Displacement	98.44	78.71	88.82
Compression	15.68	10.94	12.60
Conveyance	191.27	226.26	267.44
Other	2621.07	3184.91	3764.89
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3772.67	4440.29

Economic 3 Run Technology	1988	2000	2010
Machine Drive	3449.83	3759.11	4424.61
Pump	523.37	268.96	303.31
Air Displacement	98.44	78.29	88.35
Compression	15.68	10.76	12.39
Conveyance	191.27	225.02	266.01
Other	2621.07	3176.08	3754.55
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3759.11	4424.61

Table 9: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Mechanical Pulp
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3733.94	4394.98
Pump	523.37	263.15	296.72
Air Displacement	98.44	77.46	87.41
Compression	15.68	10.40	11.98
Conveyance	191.27	222.45	262.93
Other	2621.07	3160.47	3735.96
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3733.94	4394.98

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3703.73	4360.06
Pump	523.37	255.90	288.60
Air Displacement	98.44	76.43	86.25
Compression	15.68	9.96	11.47
Conveyance	191.27	219.23	259.19
Other	2621.07	3142.21	3714.57
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3703.73	4360.06

Technological Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3879.64	4567.93
Pump	523.37	283.05	319.44
Air Displacement	98.44	77.14	87.07
Compression	15.68	10.76	12.41
Conveyance	191.27	228.14	269.97
Other	2621.07	3280.55	3879.04
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3879.64	4567.93

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3768.85	4438.69
Pump	523.37	254.75	287.50
Air Displacement	98.44	73.28	82.72
Compression	15.68	9.15	10.55
Conveyance	191.27	216.73	256.47
Other	2621.07	3214.94	3801.46
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3768.85	4438.69

Table 10: High Growth Scenario, Electricity Demand for Process 3

 Industry: PAPER Process: Paper Products
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1248	2576	3459		
Natural	1248	2500	3322	3.0%	4.0%
Econ 1	1248	1654	2371	35.8%	31.5%
Econ 2	1248	1635	2342	36.6%	32.3%
Econ 3	1248	1619	2317	37.2%	33.0%
Econ 4	1248	1590	2274	38.3%	34.3%
Econ 5	1248	1560	2228	39.4%	35.6%
Tech Pot	1248	1473	2149	42.8%	37.9%
Tech Soc	1248	1371	1988	46.8%	42.5%

Table 11: High Growth, Electrical Demand in Auxiliary Units

 Industry: Paper Process: Paper Products
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	528.6	889.9	1024.3			Frozen	4.8	8.7	10.2		
Natural	528.6	792.0	866.2	11.0%	15.4%	Natural	4.8	8.7	10.1	.7%	1.1%
Econ 1	528.6	290.6	319.2	67.3%	68.8%	Econ 1	4.8	6.1	7.1	30.6%	30.5%
Econ 2	528.6	286.2	314.4	67.8%	69.3%	Econ 2	4.8	6.0	7.1	31.1%	31.1%
Econ 3	528.6	283.2	311.1	68.2%	69.6%	Econ 3	4.8	6.0	7.0	31.5%	31.4%
Econ 4	528.6	277.3	304.7	68.8%	70.3%	Econ 4	4.8	5.9	7.0	32.2%	32.1%
Econ 5	528.6	270.0	296.7	69.7%	71.0%	Econ 5	4.8	5.8	6.9	33.0%	33.0%
Tech Pot	528.6	288.9	317.3	67.5%	69.0%	Tech Pot	4.8	6.0	7.0	31.3%	31.2%
Tech Soc	528.6	260.0	285.6	70.8%	72.1%	Tech Soc	4.8	5.7	6.7	34.7%	34.7%

Air Displacement						Process drives					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	136.6	231.9	269.3			Frozen	494.8	831.8	996.3		
Natural	136.6	209.6	223.6	9.6%	17.0%	Natural	494.8	886.7	1079.5	-6.6%	-8.3%
Econ 1	136.6	115.5	127.9	50.2%	52.5%	Econ 1	494.8	703.5	847.2	15.4%	15.0%
Econ 2	136.6	114.6	126.9	50.6%	52.9%	Econ 2	494.8	698.4	840.6	16.0%	15.6%
Econ 3	136.6	114.0	126.2	50.8%	53.1%	Econ 3	494.8	691.7	831.4	16.8%	16.6%
Econ 4	136.6	112.8	124.9	51.3%	53.6%	Econ 4	494.8	681.8	817.9	18.0%	17.9%
Econ 5	136.6	111.4	123.3	52.0%	54.2%	Econ 5	494.8	675.0	809.5	18.9%	18.8%
Tech Pot	136.6	114.7	127.0	50.5%	52.8%	Tech Pot	494.8	528.2	633.4	36.5%	36.4%
Tech Soc	136.6	109.0	120.6	53.0%	55.2%	Tech Soc	494.8	517.7	620.8	37.8%	37.7%

Compression					
			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	83.1	141.4	165.8		
Natural	83.1	124.4	141.8	12.0%	14.5%
Econ 1	83.1	63.1	72.1	55.4%	56.5%
Econ 2	83.1	61.6	70.4	56.4%	57.5%
Econ 3	83.1	60.6	69.3	57.1%	58.2%
Econ 4	83.1	58.7	67.1	58.5%	59.5%
Econ 5	83.1	56.3	64.4	60.2%	61.2%
Tech Pot	83.1	62.4	71.4	55.9%	57.0%
Tech Soc	83.1	53.1	60.7	62.5%	63.4%

Table 12: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Paper Products
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	1247.81	2103.77	2466.07
Pump	528.56	889.88	1024.35
Air Displacement	136.63	231.94	269.32
Compression	83.06	141.43	165.81
Conveyance	4.81	8.72	10.24
Other	494.75	831.80	996.34
Electolysis	.00	.00	.00
Process Heat	.00	472.65	992.70
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	2576.42	3458.77

Natural Run			
Technology	1988	2000	2010
Machine Drive	1247.81	2021.43	2321.23
Pump	528.56	792.03	866.21
Air Displacement	136.63	209.57	223.55
Compression	83.06	124.44	141.85
Conveyance	4.81	8.66	10.13
Other	494.75	886.73	1079.49
Electolysis	.00	.00	.00
Process Heat	.00	478.72	1000.49
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	2500.15	3321.72

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	1178.74	1373.51
Pump	528.56	290.58	319.23
Air Displacement	136.63	115.52	127.86
Compression	83.06	63.13	72.15
Conveyance	4.81	6.05	7.12
Other	494.75	703.46	847.16
Electolysis	.00	.00	.00
Process Heat	.00	474.90	997.12
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	1653.64	2370.62

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	1166.82	1359.39
Pump	528.56	286.16	314.38
Air Displacement	136.63	114.62	126.87
Compression	83.06	61.63	70.44
Conveyance	4.81	6.01	7.06
Other	494.75	698.40	840.65
Electolysis	.00	.00	.00
Process Heat	.00	467.83	982.25
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	1634.65	2341.64

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	1155.57	1345.06
Pump	528.56	283.22	311.14
Air Displacement	136.63	114.03	126.21
Compression	83.06	60.64	69.30
Conveyance	4.81	5.98	7.03
Other	494.75	691.71	831.38
Electolysis	.00	.00	.00
Process Heat	.00	463.12	972.35
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	1618.69	2317.40

Table 12: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Paper Products
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1247.81	1136.60	1321.55	Machine Drive	1247.81	1118.57	1300.67
Pump	528.56	277.35	304.69	Pump	528.56	270.04	296.67
Air Displacement	136.63	112.84	124.90	Air Displacement	136.63	111.38	123.27
Compression	83.06	58.70	67.09	Compression	83.06	56.31	64.36
Conveyance	4.81	5.92	6.95	Conveyance	4.81	5.84	6.86
Other	494.75	681.79	817.92	Other	494.75	675.00	809.50
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	453.69	952.51	Process Heat	.00	441.88	927.69
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1247.81	1590.29	2274.06	Total	1247.81	1560.45	2228.35

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1247.81	1000.25	1156.16	Machine Drive	1247.81	945.40	1094.36
Pump	528.56	288.86	317.33	Pump	528.56	259.98	285.60
Air Displacement	136.63	114.74	127.00	Air Displacement	136.63	109.00	120.65
Compression	83.06	62.44	71.36	Compression	83.06	53.07	60.66
Conveyance	4.81	5.99	7.04	Conveyance	4.81	5.69	6.69
Other	494.75	528.21	633.43	Other	494.75	517.65	620.76
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	472.65	992.70	Process Heat	.00	425.38	893.43
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1247.81	1472.90	2148.87	Total	1247.81	1370.78	1987.79

Table 1: Low Growth Scenario, Electricity Demand

Industry:PAPER

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	10426	11363	12405		
Natural	10426	10493	11109	7.7%	10.5%
Econ 1	10426	6327	6938	44.3%	44.1%
Econ 2	10426	6276	6883	44.8%	44.5%
Econ 3	10426	6240	6844	45.1%	44.8%
Econ 4	10426	6172	6772	45.7%	45.4%
Econ 5	10426	6094	6689	46.4%	46.1%
Tech Pot	10426	6147	6762	45.9%	45.5%
Tech Soc	10426	5874	6471	48.3%	47.8%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

Industry:PAPER

Cons. Pot. Rev. Low Output

Auxiliary unit electrical demands (GWh)

Pumping					% FROM FROZEN		Conveyance					% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010		
Frozen	3888.9	3769.8	3955.0			Frozen	501.9	577.3	622.4				
Natural	3888.9	3349.6	3328.5	11.1%	15.8%	Natural	501.9	550.6	583.7	4.6%	6.2%		
Econ 1	3888.9	1221.1	1220.4	67.6%	69.1%	Econ 1	501.9	374.0	403.6	35.2%	35.2%		
Econ 2	3888.9	1202.5	1201.8	68.1%	69.6%	Econ 2	501.9	371.1	400.4	35.7%	35.7%		
Econ 3	3888.9	1190.0	1189.3	68.4%	69.9%	Econ 3	501.9	369.2	398.3	36.1%	36.0%		
Econ 4	3888.9	1165.1	1164.4	69.1%	70.6%	Econ 4	501.9	365.2	394.0	36.8%	36.7%		
Econ 5	3888.9	1133.9	1133.2	69.9%	71.3%	Econ 5	501.9	360.2	388.6	37.6%	37.6%		
Tech Pot	3888.9	1109.3	1117.4	70.6%	71.7%	Tech Pot	501.9	372.3	402.1	35.5%	35.4%		
Tech Soc	3888.9	998.4	1005.6	73.5%	74.6%	Tech Pot	501.9	353.7	382.0	38.7%	38.6%		
Air Displacement					% FROM FROZEN		Process drives					% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010		
Frozen	1149.7	1075.0	1119.4			Frozen	4152.0	5174.2	5836.5				
Natural	1149.7	964.5	915.8	10.3%	18.2%	Natural	4152.0	4966.9	5580.3	4.0%	4.4%		
Econ 1	1149.7	525.4	521.3	51.1%	53.4%	Econ 1	4152.0	3769.4	4294.1	27.1%	26.4%		
Econ 2	1149.7	521.3	517.2	51.5%	53.8%	Econ 2	4152.0	3750.3	4272.7	27.5%	26.8%		
Econ 3	1149.7	518.6	514.5	51.8%	54.0%	Econ 3	4152.0	3735.4	4256.1	27.8%	27.1%		
Econ 4	1149.7	513.2	509.2	52.3%	54.5%	Econ 4	4152.0	3710.8	4228.3	28.3%	27.6%		
Econ 5	1149.7	506.5	502.5	52.9%	55.1%	Econ 5	4152.0	3686.1	4200.7	28.8%	28.0%		
Tech Pot	1149.7	520.4	516.2	51.6%	53.9%	Tech Pot	4152.0	3708.9	4229.3	28.3%	27.5%		
Tech Soc	1149.7	494.4	490.4	54.0%	56.2%	Tech Soc	4152.0	3634.7	4144.7	29.8%	29.0%		
Compression					% FROM FROZEN								
Run	1988	2000	2010	2000	2010								
Frozen	212.6	212.2	229.8										
Natural	212.6	185.6	194.9	12.5%	15.2%								
Econ 1	212.6	93.6	98.8	55.9%	57.0%								
Econ 2	212.6	91.3	96.4	57.0%	58.0%								
Econ 3	212.6	89.9	94.9	57.6%	58.7%								
Econ 4	212.6	87.0	91.8	59.0%	60.0%								
Econ 5	212.6	83.4	88.1	60.7%	61.7%								
Tech Pot	212.6	92.3	97.4	56.5%	57.6%								
Tech Soc	212.6	78.4	82.8	63.0%	64.0%								

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Natural Run

Technology 1988 2000 2010

Machine Drive 9905.07 10017.14 10603.18

Pump 3888.89 3349.60 3328.52

Air Displacement 1149.68 964.46 915.79

Compression 212.60 185.58 194.93

Conveyance 501.89 550.56 583.68

Other 4152.01 4966.94 5580.26

Electrolysis .00 .00 .00

Process Heat .00 3.89 5.27

Light 417.06 359.55 369.72

Other 104.26 112.28 130.44

Total 10426.39 10492.86 11108.60

Economic 2 Run

Technology 1988 2000 2010

Machine Drive 9905.07 5936.54 6488.51

Pump 3888.89 1202.48 1201.77

Air Displacement 1149.68 521.28 517.22

Compression 212.60 91.33 96.43

Conveyance 501.89 371.12 400.44

Other 4152.01 3750.33 4272.65

Electrolysis .00 .00 .00

Process Heat .00 .24 .26

Light 417.06 227.89 264.75

Other 104.26 111.44 129.46

Total 10426.39 6276.11 6882.98

Frozen Run

Technology 1988 2000 2010

Machine Drive 9905.07 10808.45 11763.08

Pump 3888.89 3769.76 3955.00

Air Displacement 1149.68 1075.02 1119.42

Compression 212.60 212.16 229.78

Conveyance 501.89 577.32 622.36

Other 4152.01 5174.20 5836.52

Electrolysis .00 .00 .00

Process Heat .00 .00 .00

Light 417.06 442.34 511.85

Other 104.26 112.28 130.44

Total 10426.39 11363.08 12405.37

Economic 1 Run

Technology 1988 2000 2010

Machine Drive 9905.07 5983.48 6538.11

Pump 3888.89 1221.11 1220.37

Air Displacement 1149.68 525.35 521.26

Compression 212.60 93.56 98.77

Conveyance 501.89 374.05 403.57

Other 4152.01 3769.41 4294.15

Electrolysis .00 .00 .00

Process Heat .00 .23 .25

Light 417.06 231.36 268.78

Other 104.26 112.28 130.44

Total 10426.39 6327.35 6937.59

Economic 3 Run

Technology 1988 2000 2010

Machine Drive 9905.07 5903.03 6453.11

Pump 3888.89 1190.02 1189.33

Air Displacement 1149.68 518.56 514.51

Compression 212.60 89.86 94.87

Conveyance 501.89 369.15 398.34

Other 4152.01 3735.44 4256.06

Electrolysis .00 .00 .00

Process Heat .00 .25 .27

Light 417.06 225.58 262.06

Other 104.26 110.88 128.81

Total 10426.39 6239.73 6844.26

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run

Technology	1988	2000	2010
Machine Drive	9905.07	5841.20	6387.63
Pump	3888.89	1165.12	1164.39
Air Displacement	1149.68	513.16	509.15
Compression	212.60	86.98	91.83
Conveyance	501.89	365.15	393.96
Other	4152.01	3710.78	4228.30
Electolysis	.00	.00	.00
Process Heat	.00	.26	.29
Light	417.06	220.95	256.69
Other	104.26	109.76	127.51
Total	10426.39	6172.17	6772.12

Economic 5 Run

Technology	1988	2000	2010
Machine Drive	9905.07	5770.09	6313.10
Pump	3888.89	1133.91	1133.21
Air Displacement	1149.68	506.47	502.52
Compression	212.60	83.42	88.07
Conveyance	501.89	360.15	388.59
Other	4152.01	3686.14	4200.69
Electolysis	.00	.00	.00
Process Heat	.00	.28	.31
Light	417.06	215.17	249.97
Other	104.26	108.35	125.88
Total	10426.39	6093.90	6689.25

Technological Run

Technology	1988	2000	2010
Machine Drive	9905.07	5803.18	6362.40
Pump	3888.89	1109.33	1117.36
Air Displacement	1149.68	520.40	516.19
Compression	212.60	92.25	97.39
Conveyance	501.89	372.29	402.15
Other	4152.01	3708.90	4229.31
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	417.06	231.36	268.78
Other	104.26	112.28	130.44
Total	10426.39	6146.82	6761.62

Technological/Social Run

Technology	1988	2000	2010
Machine Drive	9905.07	5559.60	6105.55
Pump	3888.89	998.40	1005.63
Air Displacement	1149.68	494.38	490.38
Compression	212.60	78.42	82.78
Conveyance	501.89	353.68	382.04
Other	4152.01	3634.73	4144.73
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	417.06	208.23	241.90
Other	104.26	106.67	123.92
Total	10426.39	5874.49	6471.37

Table 4: Low Growth Scenario, Electricity Demand for Process 1

 Industry:PAPER Process: Chemical Pulp
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	5207	4431	4369		
Natural	5207	3976	3728	10.3%	14.7%
Econ 1	5207	1973	1895	55.5%	56.6%
Econ 2	5207	1953	1875	55.9%	57.1%
Econ 3	5207	1939	1862	56.2%	57.4%
Econ 4	5207	1913	1837	56.8%	58.0%
Econ 5	5207	1879	1805	57.6%	58.7%
Tech Pot	5207	1834	1765	58.6%	59.6%
Tech Soc	5207	1721	1657	61.2%	62.1%

Table 5: Low Growth, Electrical Demand in Auxiliary Units for Process 1

 Industry:PAPER Process: Chemical Pulp
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN		Conveyance				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	2837.0	2422.6	2386.1			Frozen	305.8	272.4	266.6		
Natural	2837.0	2166.5	2027.9	10.6%	15.0%	Natural	305.8	254.8	243.6	6.5%	8.6%
Econ 1	2837.0	795.7	747.8	67.2%	68.7%	Econ 1	305.8	174.6	171.1	35.9%	35.8%
Econ 2	2837.0	783.6	736.5	67.7%	69.1%	Econ 2	305.8	173.3	169.8	36.4%	36.3%
Econ 3	2837.0	775.5	728.9	68.0%	69.5%	Econ 3	305.8	172.4	168.9	36.7%	36.7%
Econ 4	2837.0	759.4	713.7	68.7%	70.1%	Econ 4	305.8	170.7	167.2	37.4%	37.3%
Econ 5	2837.0	739.2	694.7	69.5%	70.9%	Econ 5	305.8	168.5	165.0	38.2%	38.1%
Tech Pot	2837.0	679.1	639.2	72.0%	73.2%	Tech Pot	305.8	172.9	169.3	36.5%	36.5%
Tech Soc	2837.0	611.2	575.3	74.8%	75.9%	Tech Soc	305.8	164.2	160.9	39.7%	39.7%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	914.6	782.4	778.1			Frozen	1036.2	854.7	840.3		
Natural	914.6	701.9	636.8	10.3%	18.2%	Natural	1036.2	766.7	736.3	10.3%	12.4%
Econ 1	914.6	383.2	363.3	51.0%	53.3%	Econ 1	1036.2	576.1	570.5	32.6%	32.1%
Econ 2	914.6	380.3	360.5	51.4%	53.7%	Econ 2	1036.2	573.1	567.5	32.9%	32.5%
Econ 3	914.6	378.3	358.6	51.7%	53.9%	Econ 3	1036.2	571.1	565.5	33.2%	32.7%
Econ 4	914.6	374.3	354.9	52.2%	54.4%	Econ 4	1036.2	567.5	562.0	33.6%	33.1%
Econ 5	914.6	369.5	350.3	52.8%	55.0%	Econ 5	1036.2	563.3	557.9	34.1%	33.6%
Tech Pot	914.6	380.6	360.8	51.3%	53.6%	Tech Pot	1036.2	558.3	553.6	34.7%	34.1%
Tech Soc	914.6	361.6	342.8	53.8%	55.9%	Tech Soc	1036.2	547.2	542.6	36.0%	35.4%

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	113.9	99.0	98.1		
Natural	113.9	86.4	83.0	12.7%	15.4%
Econ 1	113.9	43.6	42.2	55.9%	57.0%
Econ 2	113.9	42.6	41.2	57.0%	58.0%
Econ 3	113.9	41.9	40.5	57.6%	58.7%
Econ 4	113.9	40.6	39.2	59.0%	60.0%
Econ 5	113.9	38.9	37.6	60.7%	61.6%
Tech Pot	113.9	43.2	41.7	56.4%	57.5%
Tech Soc	113.9	36.7	35.5	62.9%	63.9%

Table 6: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Chemical Pulp
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	5207.43	4431.02	4369.35
Pump	2836.97	2422.56	2386.15
Air Displacement	914.62	782.39	778.15
Compression	113.86	98.97	98.13
Conveyance	305.80	272.44	266.64
Other	1036.19	854.65	840.28
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	4431.02	4369.35

Natural Run			
Technology	1988	2000	2010
Machine Drive	5207.43	3976.30	3727.72
Pump	2836.97	2166.49	2027.94
Air Displacement	914.62	701.88	636.82
Compression	113.86	86.40	83.04
Conveyance	305.80	254.82	243.63
Other	1036.19	766.71	736.29
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	3976.30	3727.72

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1973.36	1894.88
Pump	2836.97	795.71	747.82
Air Displacement	914.62	383.22	363.29
Compression	113.86	43.64	42.19
Conveyance	305.80	174.65	171.07
Other	1036.19	576.14	570.53
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1973.36	1894.88

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1952.88	1875.40
Pump	2836.97	783.61	736.45
Air Displacement	914.62	380.25	360.47
Compression	113.86	42.61	41.19
Conveyance	305.80	173.32	169.77
Other	1036.19	573.09	567.52
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1952.88	1875.40

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	5207.43	1939.22	1862.41
Pump	2836.97	775.54	728.86
Air Displacement	914.62	378.27	358.59
Compression	113.86	41.92	40.52
Conveyance	305.80	172.44	168.90
Other	1036.19	571.06	565.53
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	5207.43	1939.22	1862.41

Table 6: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Chemical Pulp
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	5207.43	1912.51	1837.03	Machine Drive	5207.43	1879.34	1805.50
Pump	2836.97	759.43	713.73	Pump	2836.97	739.17	694.68
Air Displacement	914.62	374.34	354.87	Air Displacement	914.62	369.48	350.26
Compression	113.86	40.58	39.23	Compression	113.86	38.93	37.63
Conveyance	305.80	170.68	167.18	Conveyance	305.80	168.48	165.03
Other	1036.19	567.48	562.02	Other	1036.19	563.27	557.89
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	5207.43	1912.51	1837.03	Total	5207.43	1879.34	1805.50

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	5207.43	1834.15	1764.74	Machine Drive	5207.43	1720.92	1656.98
Pump	2836.97	679.12	639.19	Pump	2836.97	611.21	575.27
Air Displacement	914.62	380.64	360.84	Air Displacement	914.62	361.61	342.80
Compression	113.86	43.17	41.73	Compression	113.86	36.69	35.47
Conveyance	305.80	172.89	169.35	Conveyance	305.80	164.25	160.88
Other	1036.19	558.33	553.63	Other	1036.19	547.16	542.56
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	5207.43	1834.15	1764.74	Total	5207.43	1720.92	1656.98

Table 7: Low Growth Scenario, Electricity Demand for Process 2

Industry: PAPER Process: Mechanical Pulp
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	3450	5022	5826		
Natural	3450	4736	5397	5.7%	7.4%
Econ 1	3450	3248	3775	35.3%	35.2%
Econ 2	3450	3230	3754	35.7%	35.6%
Econ 3	3450	3218	3741	35.9%	35.8%
Econ 4	3450	3197	3716	36.4%	36.2%
Econ 5	3450	3171	3686	36.9%	36.7%
Tech Pot	3450	3321	3862	33.9%	33.7%
Tech Soc	3450	3226	3753	35.8%	35.6%

Table 8: Low Growth, Electrical Demand in Auxiliary Units

Industry: PAPER Process: Mechanical Pulp
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN		Conveyance				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	523.4	768.7	897.2			Frozen	191.3	299.3	349.2		
Natural	523.4	667.9	732.6	13.1%	18.3%	Natural	191.3	290.2	333.6	3.0%	4.5%
Econ 1	523.4	236.5	263.2	69.2%	70.7%	Econ 1	191.3	195.5	228.0	34.7%	34.7%
Econ 2	523.4	232.9	259.2	69.7%	71.1%	Econ 2	191.3	193.9	226.2	35.2%	35.2%
Econ 3	523.4	230.4	256.5	70.0%	71.4%	Econ 3	191.3	192.9	225.0	35.6%	35.6%
Econ 4	523.4	225.4	250.9	70.7%	72.0%	Econ 4	191.3	190.7	222.4	36.3%	36.3%
Econ 5	523.4	219.2	244.0	71.5%	72.8%	Econ 5	191.3	187.9	219.2	37.2%	37.2%
Tech Pot	523.4	242.5	270.1	68.5%	69.9%	Tech Pot	191.3	195.5	228.3	34.7%	34.6%
Tech Soc	523.4	218.2	243.1	71.6%	72.9%	Tech Soc	191.3	185.8	216.9	37.9%	37.9%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	98.4	143.8	168.0			Frozen	2621.1	3787.7	4385.3		
Natural	98.4	127.5	135.0	11.3%	19.6%	Natural	2621.1	3630.5	4173.6	4.2%	4.8%
Econ 1	98.4	68.0	75.7	52.7%	54.9%	Econ 1	2621.1	2738.6	3197.4	27.7%	27.1%
Econ 2	98.4	67.5	75.1	53.1%	55.3%	Econ 2	2621.1	2726.2	3183.0	28.0%	27.4%
Econ 3	98.4	67.1	74.7	53.3%	55.5%	Econ 3	2621.1	2718.6	3174.2	28.2%	27.6%
Econ 4	98.4	66.4	73.9	53.8%	56.0%	Econ 4	2621.1	2705.3	3158.5	28.6%	28.0%
Econ 5	98.4	65.5	72.9	54.4%	56.6%	Econ 5	2621.1	2689.6	3140.4	29.0%	28.4%
Tech Pot	98.4	66.1	73.6	54.0%	56.2%	Tech Pot	2621.1	2807.9	3279.3	25.9%	25.2%
Tech Soc	98.4	62.8	70.0	56.3%	58.4%	Tech Soc	2621.1	2751.7	3213.7	27.4%	26.7%

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	15.7	22.9	26.7		
Natural	15.7	19.7	22.1	14.0%	17.2%
Econ 1	15.7	9.6	10.9	58.0%	59.1%
Econ 2	15.7	9.4	10.7	59.0%	60.1%
Econ 3	15.7	9.2	10.5	59.7%	60.7%
Econ 4	15.7	8.9	10.1	61.0%	62.1%
Econ 5	15.7	8.5	9.7	62.7%	63.7%
Tech Pot	15.7	9.2	10.5	59.7%	60.7%
Tech Soc	15.7	7.8	8.9	65.7%	66.6%

Table 9: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Mechanical Pulp
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run	1988	2000	2010
Technology			
Machine Drive	3449.83	5022.34	5826.40
Pump	523.37	768.70	897.17
Air Displacement	98.44	143.79	168.00
Compression	15.68	22.88	26.69
Conveyance	191.27	299.27	349.20
Other	2621.07	3787.71	4385.34
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	5022.34	5826.40

Natural Run	1988	2000	2010
Technology			
Machine Drive	3449.83	4735.73	5396.86
Pump	523.37	667.91	732.56
Air Displacement	98.44	127.47	135.00
Compression	15.68	19.68	22.10
Conveyance	191.27	290.17	333.61
Other	2621.07	3630.50	4173.59
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	4735.73	5396.86

Economic 1 Run	1988	2000	2010
Technology			
Machine Drive	3449.83	3248.22	3775.21
Pump	523.37	236.53	263.23
Air Displacement	98.44	68.00	75.71
Compression	15.68	9.61	10.92
Conveyance	191.27	195.50	227.98
Other	2621.07	2738.58	3197.37
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3248.22	3775.21

Economic 2 Run	1988	2000	2010
Technology			
Machine Drive	3449.83	3229.82	3754.13
Pump	523.37	232.86	259.18
Air Displacement	98.44	67.47	75.12
Compression	15.68	9.38	10.66
Conveyance	191.27	193.94	226.19
Other	2621.07	2726.18	3182.99
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3229.82	3754.13

Economic 3 Run	1988	2000	2010
Technology			
Machine Drive	3449.83	3218.21	3740.87
Pump	523.37	230.39	256.46
Air Displacement	98.44	67.11	74.72
Compression	15.68	9.22	10.48
Conveyance	191.27	192.87	224.97
Other	2621.07	2718.62	3174.24
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3218.21	3740.87

Table 9: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Mechanical Pulp
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3196.65	3715.81
Pump	523.37	225.41	250.88
Air Displacement	98.44	66.39	73.92
Compression	15.68	8.92	10.13
Conveyance	191.27	190.67	222.36
Other	2621.07	2705.26	3158.52
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3196.65	3715.81

Technological Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3321.23	3861.85
Pump	523.37	242.45	270.09
Air Displacement	98.44	66.12	73.64
Compression	15.68	9.22	10.49
Conveyance	191.27	195.55	228.32
Other	2621.07	2807.89	3279.30
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3321.23	3861.85

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3170.78	3686.28
Pump	523.37	219.20	244.01
Air Displacement	98.44	65.51	72.94
Compression	15.68	8.54	9.70
Conveyance	191.27	187.91	219.20
Other	2621.07	2689.62	3140.42
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3170.78	3686.28

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	3449.83	3226.36	3752.58
Pump	523.37	218.21	243.09
Air Displacement	98.44	62.81	69.95
Compression	15.68	7.84	8.92
Conveyance	191.27	185.77	216.91
Other	2621.07	2751.73	3213.71
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	3449.83	3226.36	3752.58

Table 10: Low Growth Scenario, Electricity Demand for Process 3

Industry: PAPER Process: Paper Products
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1248	1355	1567		
Natural	1248	1309	1484	3.4%	5.3%
Econ 1	1248	762	868	43.8%	44.6%
Econ 2	1248	754	859	44.4%	45.2%
Econ 3	1248	746	850	45.0%	45.8%
Econ 4	1248	732	835	46.0%	46.7%
Econ 5	1248	720	822	46.8%	47.6%
Tech Pot	1248	648	736	52.2%	53.1%
Tech Soc	1248	612	696	54.8%	55.6%

Table 11: Low Growth, Electrical Demand in Auxiliary Units

Industry: PAPER Process: Paper Products
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	528.6	578.5	671.7			Frozen	4.8	5.6	6.5		
Natural	528.6	515.2	568.0	10.9%	15.4%	Natural	4.8	5.6	6.4	.7%	1.1%
Econ 1	528.6	188.9	209.3	67.3%	68.8%	Econ 1	4.8	3.9	4.5	30.6%	30.6%
Econ 2	528.6	186.0	206.1	67.8%	69.3%	Econ 2	4.8	3.9	4.5	31.1%	31.1%
Econ 3	528.6	184.1	204.0	68.2%	69.6%	Econ 3	4.8	3.8	4.5	31.5%	31.4%
Econ 4	528.6	180.3	199.8	68.8%	70.3%	Econ 4	4.8	3.8	4.4	32.2%	32.1%
Econ 5	528.6	175.5	194.5	69.7%	71.0%	Econ 5	4.8	3.8	4.4	33.0%	33.0%
Tech Pot	528.6	187.8	208.1	67.5%	69.0%	Tech Pot	4.8	3.9	4.5	31.3%	31.2%
Tech Soc	528.6	169.0	187.3	70.8%	72.1%	Tech Soc	4.8	3.7	4.3	34.7%	34.7%

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	136.6	148.8	173.3			Frozen	494.8	531.8	610.9		
Natural	136.6	135.1	144.0	9.2%	16.9%	Natural	494.8	569.7	670.4	-7.1%	-9.7%
Econ 1	136.6	74.1	82.3	50.2%	52.5%	Econ 1	494.8	454.7	526.2	14.5%	13.9%
Econ 2	136.6	73.6	81.6	50.6%	52.9%	Econ 2	494.8	451.1	522.1	15.2%	14.5%
Econ 3	136.6	73.2	81.2	50.8%	53.1%	Econ 3	494.8	445.8	516.3	16.2%	15.5%
Econ 4	136.6	72.4	80.4	51.3%	53.6%	Econ 4	494.8	438.0	507.8	17.6%	16.9%
Econ 5	136.6	71.5	79.3	52.0%	54.2%	Econ 5	494.8	433.3	502.4	18.5%	17.8%
Tech Pot	136.6	73.6	81.7	50.5%	52.8%	Tech Pot	494.8	342.7	396.4	35.6%	35.1%
Tech Soc	136.6	70.0	77.6	53.0%	55.2%	Tech Soc	494.8	335.8	388.5	36.9%	36.4%

Compression					
% FROM FROZEN					
Run	1988	2000	2010	2000	2010
Frozen	83.1	90.3	105.0		
Natural	83.1	79.5	89.8	12.0%	14.5%
Econ 1	83.1	40.3	45.7	55.4%	56.5%
Econ 2	83.1	39.3	44.6	56.4%	57.5%
Econ 3	83.1	38.7	43.9	57.1%	58.2%
Econ 4	83.1	37.5	42.5	58.5%	59.5%
Econ 5	83.1	36.0	40.7	60.2%	61.2%
Tech Pot	83.1	39.9	45.2	55.9%	57.0%
Tech Soc	83.1	33.9	38.4	62.5%	63.4%

Table 12: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Paper Products
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	1247.81	1355.10	1567.33
Pump	528.56	578.49	671.68
Air Displacement	136.63	148.85	173.27
Compression	83.06	90.31	104.96
Conveyance	4.81	5.61	6.51
Other	494.75	531.84	610.90
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	1355.10	1567.33

Natural Run			
Technology	1988	2000	2010
Machine Drive	1247.81	1305.11	1478.60
Pump	528.56	515.20	568.02
Air Displacement	136.63	135.11	143.97
Compression	83.06	79.50	89.79
Conveyance	4.81	5.57	6.44
Other	494.75	569.73	670.38
Electrolysis	.00	.00	.00
Process Heat	.00	3.89	5.42
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	1309.00	1484.02

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	761.90	868.02
Pump	528.56	188.88	209.32
Air Displacement	136.63	74.14	82.26
Compression	83.06	40.30	45.67
Conveyance	4.81	3.89	4.52
Other	494.75	454.69	526.25
Electrolysis	.00	.00	.00
Process Heat	.00	.23	.26
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	762.13	868.28

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	753.84	858.98
Pump	528.56	186.01	206.14
Air Displacement	136.63	73.56	81.63
Compression	83.06	39.35	44.58
Conveyance	4.81	3.87	4.49
Other	494.75	451.05	522.14
Electrolysis	.00	.00	.00
Process Heat	.00	.24	.27
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	754.08	859.25

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	1247.81	745.59	849.83
Pump	528.56	184.09	204.01
Air Displacement	136.63	73.18	81.20
Compression	83.06	38.71	43.87
Conveyance	4.81	3.85	4.47
Other	494.75	445.76	516.29
Electrolysis	.00	.00	.00
Process Heat	.00	.25	.28
Light	.00	.00	.00
Other	.00	.00	.00
Total	1247.81	745.84	850.12

Table 12: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: PAPER Process: Paper Products
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1247.81	732.03	834.79	Machine Drive	1247.81	719.97	821.32
Pump	528.56	180.28	199.79	Pump	528.56	175.53	194.52
Air Displacement	136.63	72.42	80.36	Air Displacement	136.63	71.48	79.32
Compression	83.06	37.48	42.47	Compression	83.06	35.95	40.74
Conveyance	4.81	3.81	4.42	Conveyance	4.81	3.76	4.36
Other	494.75	438.05	507.76	Other	494.75	433.25	502.38
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.26	.30	Process Heat	.00	.28	.32
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1247.81	732.30	835.09	Total	1247.81	720.26	821.65

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1247.81	647.80	735.82	Machine Drive	1247.81	612.32	696.00
Pump	528.56	187.76	208.08	Pump	528.56	168.98	187.27
Air Displacement	136.63	73.64	81.71	Air Displacement	136.63	69.96	77.62
Compression	83.06	39.86	45.17	Compression	83.06	33.88	38.39
Conveyance	4.81	3.86	4.48	Conveyance	4.81	3.66	4.25
Other	494.75	342.68	396.38	Other	494.75	335.83	388.45
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1247.81	647.80	735.82	Total	1247.81	612.32	696.00

PART 2

MINING

Table 1: High Growth Scenario, Electricity Demand

Industry: MINING

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	3184	3806	4364		
Natural	3184	3665	4171	3.7%	4.4%
Econ 1	3184	2899	3308	23.8%	24.2%
Econ 2	3184	2864	3268	24.8%	25.1%
Econ 3	3184	2842	3243	25.3%	25.7%
Econ 4	3184	2799	3193	26.5%	26.8%
Econ 5	3184	2746	3133	27.9%	28.2%
Tech Pot	3184	2883	3290	24.3%	24.6%
Tech Soc	3184	2674	3051	29.7%	30.1%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry: MINING

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping					% FROM FROZEN					Conveyance					% FROM FROZEN				
Run	1988	2000	2010		2000	2010				Run	1988	2000	2010		2000	2010			
Frozen	422.9	504.3	580.9							Frozen	66.9	79.8	91.8						
Natural	422.9	456.9	502.0	9.4%	13.6%					Natural	66.9	78.0	89.9	2.2%	2.1%				
Econ 1	422.9	187.6	206.1	62.8%	64.5%					Econ 1	66.9	62.5	72.0	21.6%	21.6%				
Econ 2	422.9	184.7	202.9	63.4%	65.1%					Econ 2	66.9	62.0	71.4	22.2%	22.2%				
Econ 3	422.9	182.8	200.8	63.8%	65.4%					Econ 3	66.9	61.7	71.1	22.6%	22.6%				
Econ 4	422.9	179.0	196.7	64.5%	66.1%					Econ 4	66.9	61.1	70.3	23.4%	23.4%				
Econ 5	422.9	174.3	191.5	65.4%	67.0%					Econ 5	66.9	60.3	69.4	24.4%	24.4%				
Tech Pot	422.9	186.8	205.2	63.0%	64.7%					Tech Pot	66.9	62.1	71.5	22.1%	22.1%				
Tech Soc	422.9	168.1	184.7	66.7%	68.2%					Tech Pot	66.9	59.0	68.0	26.0%	26.0%				
Air Displacement					% FROM FROZEN					Process drives					% FROM FROZEN				
Run	1988	2000	2010		2000	2010				Run	1988.0	2000.0	2010.0		2000	2010			
Frozen	148.4	176.2	204.6							Frozen	2333.9	2791.4	3191.7						
Natural	148.4	150.2	166.5	14.7%	18.6%					Natural	2333.9	2788.6	3191.9	.1%	-.0%				
Econ 1	148.4	99.4	110.1	43.6%	46.2%					Econ 1	2333.9	2409.2	2757.6	13.7%	13.6%				
Econ 2	148.4	98.6	109.3	44.0%	46.6%					Econ 2	2333.9	2380.6	2724.9	14.7%	14.6%				
Econ 3	148.4	98.1	108.7	44.3%	46.9%					Econ 3	2333.9	2362.5	2704.1	15.4%	15.3%				
Econ 4	148.4	97.1	107.6	44.9%	47.4%					Econ 4	2333.9	2327.8	2664.4	16.6%	16.5%				
Econ 5	148.4	95.8	106.2	45.6%	48.1%					Econ 5	2333.9	2285.2	2615.7	18.1%	18.0%				
Tech Pot	148.4	99.0	109.7	43.8%	46.4%					Tech Pot	2333.9	2395.1	2741.5	14.2%	14.1%				
Tech Soc	148.4	94.0	104.2	46.6%	49.1%					Tech Soc	2333.9	2227.5	2549.6	20.2%	20.1%				
Compression					% FROM FROZEN														
Run	1988.0	2000.0	2010.0		2000	2010													
Frozen	53.2	63.3	73.1																
Natural	53.2	52.3	58.8	17.4%	19.5%														
Econ 1	53.2	31.7	35.6	50.0%	51.3%														
Econ 2	53.2	30.9	34.8	51.2%	52.4%														
Econ 3	53.2	30.4	34.2	51.9%	53.1%														
Econ 4	53.2	29.5	33.2	53.4%	54.6%														
Econ 5	53.2	28.3	31.8	55.3%	56.4%														
Tech Pot	53.2	31.5	35.4	50.2%	51.5%														
Tech Soc	53.2	26.8	30.1	57.7%	58.8%														

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Natural Run			
Technology	1988	2000	2010
Machine Drive	3025.20	3526.05	4009.08
Pump	422.90	456.87	502.03
Air Displacement	148.36	150.23	166.48
Compression	53.20	52.27	58.81
Conveyance	66.88	78.05	89.88
Other	2333.86	2788.63	3191.88
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	120.13	139.74
Other	15.92	18.82	21.89
Total	3184.42	3665.00	4170.71

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2756.89	3143.33
Pump	422.90	184.68	202.94
Air Displacement	148.36	98.61	109.27
Compression	53.20	30.93	34.79
Conveyance	66.88	62.03	71.43
Other	2333.86	2380.65	2724.90
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	88.44	102.88
Other	15.92	18.83	21.90
Total	3184.42	2864.16	3268.11

Frozen Run			
Technology	1988	2000	2010
Machine Drive	3025.20	3615.03	4142.09
Pump	422.90	504.34	580.87
Air Displacement	148.36	176.19	204.59
Compression	53.20	63.31	73.08
Conveyance	66.88	79.77	91.85
Other	2333.86	2791.42	3191.71
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	172.30	200.31
Other	15.92	18.97	22.07
Total	3184.42	3806.30	4364.47

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2790.28	3181.38
Pump	422.90	187.55	206.09
Air Displacement	148.36	99.38	110.13
Compression	53.20	31.65	35.61
Conveyance	66.88	62.51	71.99
Other	2333.86	2409.19	2757.57
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	89.79	104.45
Other	15.92	18.97	22.07
Total	3184.42	2899.04	3307.90

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2735.52	3118.99
Pump	422.90	182.77	200.84
Air Displacement	148.36	98.09	108.69
Compression	53.20	30.44	34.25
Conveyance	66.88	61.70	71.06
Other	2333.86	2362.52	2704.15
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	87.54	101.83
Other	15.92	18.74	21.79
Total	3184.42	2841.80	3242.61

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2694.42	3072.16
Pump	422.90	178.97	196.66
Air Displacement	148.36	97.07	107.56
Compression	53.20	29.48	33.17
Conveyance	66.88	61.07	70.33
Other	2333.86	2327.82	2664.43
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	85.75	99.75
Other	15.92	18.55	21.57
Total	3184.42	2798.71	3193.48

Technological Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2774.47	3163.33
Pump	422.90	186.76	205.22
Air Displacement	148.36	98.95	109.65
Compression	53.20	31.50	35.44
Conveyance	66.88	62.13	71.55
Other	2333.86	2395.12	2741.47
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	89.79	104.45
Other	15.92	18.97	22.07
Total	3184.42	2883.23	3289.85

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2643.84	3014.55
Pump	422.90	174.25	191.48
Air Displacement	148.36	95.81	106.17
Compression	53.20	28.29	31.83
Conveyance	66.88	60.28	69.42
Other	2333.86	2285.21	2615.65
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	83.50	97.13
Other	15.92	18.31	21.30
Total	3184.42	2745.65	3132.98

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	3025.20	2575.36	2936.53
Pump	422.90	168.09	184.70
Air Displacement	148.36	94.01	104.17
Compression	53.20	26.78	30.12
Conveyance	66.88	59.02	67.97
Other	2333.86	2227.46	2549.56
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	143.30	80.81	94.00
Other	15.92	18.02	20.97
Total	3184.42	2674.19	3051.50

Table 4: High Growth Scenario, Electricity Demand for Process 1

Industry: MINING Process: Coal Mining
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	670	795	924		
Natural	670	742	844	6.6%	8.7%
Econ 1	670	508	582	36.0%	37.1%
Econ 2	670	502	575	36.8%	37.8%
Econ 3	670	498	570	37.3%	38.3%
Econ 4	670	491	561	38.2%	39.3%
Econ 5	670	481	551	39.4%	40.4%
Tech Pot	670	506	579	36.4%	37.4%
Tech Soc	670	469	536	41.0%	42.0%

Table 5: High Growth, Electrical Demand in Auxiliary Units for Process 1

Industry: MINING Process: Coal Mining
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN		Conveyance				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	195.1	231.6	269.4			Frozen	29.8	35.4	41.1		
Natural	195.1	209.8	232.9	9.4%	13.6%	Natural	29.8	34.6	40.3	2.2%	2.1%
Econ 1	195.1	86.1	95.6	62.8%	64.5%	Econ 1	29.8	27.7	32.2	21.6%	21.6%
Econ 2	195.1	84.8	94.1	63.4%	65.1%	Econ 2	29.8	27.5	32.0	22.2%	22.2%
Econ 3	195.1	83.9	93.2	63.8%	65.4%	Econ 3	29.8	27.3	31.8	22.6%	22.6%
Econ 4	195.1	82.2	91.2	64.5%	66.1%	Econ 4	29.8	27.1	31.5	23.4%	23.4%
Econ 5	195.1	80.0	88.8	65.4%	67.0%	Econ 5	29.8	26.7	31.1	24.4%	24.4%
Tech Pot	195.1	85.8	95.2	63.0%	64.7%	Tech Pot	29.8	27.5	32.0	22.1%	22.1%
Tech Soc	195.1	77.2	85.7	66.7%	68.2%	Tech Soc	29.8	26.2	30.4	26.0%	26.0%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988.0	2000.0	2010.0	2000	2010
Frozen	134.6	159.7	185.8			Frozen	279.4	331.6	385.5		
Natural	134.6	136.2	151.2	14.7%	18.6%	Natural	279.4	331.3	385.5	.1%	-.0%
Econ 1	134.6	90.1	100.0	43.6%	46.2%	Econ 1	279.4	286.2	333.1	13.7%	13.6%
Econ 2	134.6	89.4	99.2	44.0%	46.6%	Econ 2	279.4	282.8	329.1	14.7%	14.6%
Econ 3	134.6	88.9	98.7	44.3%	46.9%	Econ 3	279.4	280.6	326.6	15.4%	15.3%
Econ 4	134.6	88.0	97.7	44.9%	47.4%	Econ 4	279.4	276.5	321.8	16.6%	16.5%
Econ 5	134.6	86.8	96.4	45.6%	48.1%	Econ 5	279.4	271.5	315.9	18.1%	18.0%
Tech Pot	134.6	89.7	99.6	43.8%	46.4%	Tech Pot	279.4	284.5	331.1	14.2%	14.1%
Tech Soc	134.6	85.2	94.6	46.6%	49.1%	Tech Soc	279.4	264.6	307.9	20.2%	20.1%

Compression				% FROM FROZEN	
Run	1988.0	2000.0	2010.0	2000	2010
Frozen	30.8	36.5	42.5		
Natural	30.8	30.2	34.2	17.4%	19.5%
Econ 1	30.8	18.3	20.7	50.0%	51.3%
Econ 2	30.8	17.8	20.2	51.2%	52.4%
Econ 3	30.8	17.6	19.9	51.9%	53.1%
Econ 4	30.8	17.0	19.3	53.4%	54.6%
Econ 5	30.8	16.3	18.5	55.3%	56.4%
Tech Pot	30.8	18.2	20.6	50.2%	51.5%
Tech Soc	30.8	15.5	17.5	57.7%	58.8%

Table 6: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Coal Mining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run	1988	2000	2010
Technology			
Machine Drive	669.61	794.74	924.33
Pump	195.08	231.56	269.42
Air Displacement	134.58	159.69	185.76
Compression	30.81	36.53	42.51
Conveyance	29.78	35.35	41.13
Other	279.36	331.60	385.51
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	794.74	924.33

Natural Run	1988	2000	2010
Technology			
Machine Drive	669.61	741.96	844.00
Pump	195.08	209.77	232.86
Air Displacement	134.58	136.17	151.16
Compression	30.81	30.16	34.21
Conveyance	29.78	34.59	40.25
Other	279.36	331.27	385.53
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	741.96	844.00

Economic 1 Run	1988	2000	2010
Technology			
Machine Drive	669.61	508.35	581.60
Pump	195.08	86.11	95.59
Air Displacement	134.58	90.08	99.99
Compression	30.81	18.26	20.71
Conveyance	29.78	27.70	32.24
Other	279.36	286.19	333.07
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	508.35	581.60

Economic 2 Run	1988	2000	2010
Technology			
Machine Drive	669.61	502.31	574.69
Pump	195.08	84.80	94.13
Air Displacement	134.58	89.38	99.21
Compression	30.81	17.85	20.24
Conveyance	29.78	27.49	31.99
Other	279.36	282.80	329.12
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	502.31	574.69

Economic 3 Run	1988	2000	2010
Technology			
Machine Drive	669.61	498.38	570.20
Pump	195.08	83.92	93.15
Air Displacement	134.58	88.91	98.69
Compression	30.81	17.57	19.92
Conveyance	29.78	27.34	31.82
Other	279.36	280.65	326.62
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	498.38	570.20

Table 6: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Coal Mining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	669.61	490.76	561.49	Machine Drive	669.61	481.35	550.74
Pump	195.08	82.17	91.22	Pump	195.08	80.01	88.81
Air Displacement	134.58	87.98	97.67	Air Displacement	134.58	86.84	96.40
Compression	30.81	17.01	19.29	Compression	30.81	16.33	18.51
Conveyance	29.78	27.06	31.50	Conveyance	29.78	26.71	31.09
Other	279.36	276.53	321.82	Other	279.36	271.47	315.93
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	669.61	490.76	561.49	Total	669.61	481.35	550.74
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	669.61	505.67	578.53	Machine Drive	669.61	468.60	536.16
Pump	195.08	85.75	95.19	Pump	195.08	77.18	85.67
Air Displacement	134.58	89.69	99.56	Air Displacement	134.58	85.21	94.59
Compression	30.81	18.18	20.61	Compression	30.81	15.45	17.52
Conveyance	29.78	27.53	32.04	Conveyance	29.78	26.16	30.44
Other	279.36	284.52	331.12	Other	279.36	264.61	307.95
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	669.61	505.67	578.53	Total	669.61	468.60	536.16

Table 7: High Growth Scenario, Electricity Demand for Process 2

Industry: MINING Process: Metal Mining
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	2356	2820	3218		
Natural	2356	2784	3165	1.3%	1.6%
Econ 1	2356	2282	2600	19.1%	19.2%
Econ 2	2356	2255	2569	20.1%	20.2%
Econ 3	2356	2237	2549	20.7%	20.8%
Econ 4	2356	2204	2511	21.9%	22.0%
Econ 5	2356	2162	2464	23.3%	23.4%
Tech Pot	2356	2269	2585	19.6%	19.7%
Tech Soc	2356	2107	2400	25.3%	25.4%

Table 8: High Growth, Electrical Demand in Auxiliary Units

Industry: MINING Process: Metal Mining
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	227.8	272.8	311.4			Frozen	37.1	44.4	50.7		
Natural	227.8	247.1	269.2	9.4%	13.6%	Natural	37.1	43.5	49.6	2.2%	2.1%
Econ 1	227.8	101.4	110.5	62.8%	64.5%	Econ 1	37.1	34.8	39.7	21.6%	21.6%
Econ 2	227.8	99.9	108.8	63.4%	65.1%	Econ 2	37.1	34.5	39.4	22.2%	22.2%
Econ 3	227.8	98.9	107.7	63.8%	65.4%	Econ 3	37.1	34.4	39.2	22.6%	22.6%
Econ 4	227.8	96.8	105.4	64.5%	66.1%	Econ 4	37.1	34.0	38.8	23.4%	23.4%
Econ 5	227.8	94.2	102.7	65.4%	67.0%	Econ 5	37.1	33.6	38.3	24.4%	24.4%
Tech Pot	227.8	101.0	110.0	63.0%	64.7%	Tech Pot	37.1	34.6	39.5	22.1%	22.1%
Tech Soc	227.8	90.9	99.0	66.7%	68.2%	Tech Soc	37.1	32.9	37.5	26.0%	26.0%

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988.0	2000.0	2010.0	2000	2010
Frozen	13.8	16.5	18.8			Frozen	2054.5	2459.8	2806.2		
Natural	13.8	14.1	15.3	14.7%	18.6%	Natural	2054.5	2457.4	2806.3	.1%	-.0%
Econ 1	13.8	9.3	10.1	43.6%	46.2%	Econ 1	2054.5	2123.0	2424.5	13.7%	13.6%
Econ 2	13.8	9.2	10.1	44.0%	46.6%	Econ 2	2054.5	2097.8	2395.8	14.7%	14.6%
Econ 3	13.8	9.2	10.0	44.3%	46.9%	Econ 3	2054.5	2081.9	2377.5	15.4%	15.3%
Econ 4	13.8	9.1	9.9	44.9%	47.4%	Econ 4	2054.5	2051.3	2342.6	16.6%	16.5%
Econ 5	13.8	9.0	9.8	45.6%	48.1%	Econ 5	2054.5	2013.7	2299.7	18.1%	18.0%
Tech Pot	13.8	9.3	10.1	43.8%	46.4%	Tech Pot	2054.5	2110.6	2410.3	14.2%	14.1%
Tech Soc	13.8	8.8	9.6	46.6%	49.1%	Tech Soc	2054.5	1962.9	2241.6	20.2%	20.1%

Compression					
% FROM FROZEN					
Run	1988.0	2000.0	2010.0	2000	2010
Frozen	22.4	26.8	30.6		
Natural	22.4	22.1	24.6	17.4%	19.5%
Econ 1	22.4	13.4	14.9	50.0%	51.3%
Econ 2	22.4	13.1	14.6	51.2%	52.4%
Econ 3	22.4	12.9	14.3	51.9%	53.1%
Econ 4	22.4	12.5	13.9	53.4%	54.6%
Econ 5	22.4	12.0	13.3	55.3%	56.4%
Tech Pot	22.4	13.3	14.8	50.2%	51.5%
Tech Soc	22.4	11.3	12.6	57.7%	58.8%

Table 9: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Metal Mining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2820.29	3217.76
Pump	227.82	272.78	311.44
Air Displacement	13.78	16.49	18.83
Compression	22.39	26.78	30.57
Conveyance	37.10	44.42	50.71
Other	2054.50	2459.82	2806.21
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2820.29	3217.76

Natural Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2784.10	3165.08
Pump	227.82	247.10	269.17
Air Displacement	13.78	14.06	15.32
Compression	22.39	22.11	24.60
Conveyance	37.10	43.46	49.63
Other	2054.50	2457.36	2806.35
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2784.10	3165.08

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2281.93	2599.78
Pump	227.82	101.44	110.50
Air Displacement	13.78	9.30	10.13
Compression	22.39	13.39	14.90
Conveyance	37.10	34.81	39.75
Other	2054.50	2123.00	2424.50
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2281.93	2599.78

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2254.58	2568.64
Pump	227.82	99.89	108.81
Air Displacement	13.78	9.23	10.05
Compression	22.39	13.08	14.55
Conveyance	37.10	34.54	39.44
Other	2054.50	2097.84	2395.78
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2254.58	2568.64

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2237.14	2548.78
Pump	227.82	98.85	107.68
Air Displacement	13.78	9.18	10.00
Compression	22.39	12.88	14.33
Conveyance	37.10	34.36	39.24
Other	2054.50	2081.87	2377.53
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2237.14	2548.78

Table 9: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Metal Mining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2203.66	2510.67
Pump	227.82	96.80	105.44
Air Displacement	13.78	9.09	9.90
Compression	22.39	12.47	13.88
Conveyance	37.10	34.01	38.84
Other	2054.50	2051.30	2342.61
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2203.66	2510.67

Technological Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2268.80	2584.80
Pump	227.82	101.01	110.03
Air Displacement	13.78	9.26	10.09
Compression	22.39	13.32	14.83
Conveyance	37.10	34.59	39.51
Other	2054.50	2110.60	2410.34
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2268.80	2584.80

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2162.49	2463.81
Pump	227.82	94.25	102.66
Air Displacement	13.78	8.97	9.77
Compression	22.39	11.97	13.32
Conveyance	37.10	33.57	38.33
Other	2054.50	2013.74	2299.73
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2162.49	2463.81

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	2355.58	2106.76	2400.37
Pump	227.82	90.91	99.03
Air Displacement	13.78	8.80	9.59
Compression	22.39	11.33	12.60
Conveyance	37.10	32.86	37.53
Other	2054.50	1962.86	2241.62
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	2106.76	2400.37

Table 1: Low Growth Scenario, Electricity Demand

Industry: MINING

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	3186	2339	2281		
Natural	3186	2229	2130	4.7%	6.6%
Econ 1	3186	1728	1659	26.1%	27.3%
Econ 2	3186	1707	1639	27.0%	28.2%
Econ 3	3186	1694	1626	27.6%	28.7%
Econ 4	3186	1668	1601	28.7%	29.8%
Econ 5	3186	1636	1570	30.0%	31.2%
Tech Pot	3186	1719	1650	26.5%	27.7%
Tech Soc	3186	1593	1529	31.9%	33.0%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

Industry: MINING

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	422.9	350.3	355.2			Frozen	66.9	54.9	55.5		
Natural	422.9	317.5	306.9	9.4%	13.6%	Natural	66.9	54.1	54.7	1.4%	1.4%
Econ 1	422.9	130.2	126.0	62.8%	64.5%	Econ 1	66.9	43.0	43.5	21.7%	21.6%
Econ 2	422.9	128.2	124.1	63.4%	65.1%	Econ 2	66.9	42.7	43.2	22.3%	22.2%
Econ 3	422.9	126.9	122.8	63.8%	65.4%	Econ 3	66.9	42.5	43.0	22.7%	22.6%
Econ 4	422.9	124.3	120.3	64.5%	66.1%	Econ 4	66.9	42.0	42.5	23.5%	23.4%
Econ 5	422.9	121.0	117.1	65.5%	67.0%	Econ 5	66.9	41.5	42.0	24.5%	24.4%
Tech Pot	422.9	129.7	125.5	63.0%	64.7%	Tech Pot	66.9	42.7	43.2	22.1%	22.1%
Tech Soc	422.9	116.7	112.9	66.7%	68.2%	Tech Pot	66.9	40.6	41.1	26.0%	26.0%
Air Displacement						Process drives					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988.0	2000.0	2010.0	2000	2010
Frozen	148.4	153.7	165.0			Frozen	2333.9	1560.6	1471.1		
Natural	148.4	141.5	140.6	8.0%	14.8%	Natural	2333.9	1532.3	1447.4	1.8%	1.6%
Econ 1	148.4	86.7	88.8	43.6%	46.2%	Econ 1	2333.9	1346.7	1271.1	13.7%	13.6%
Econ 2	148.4	86.0	88.1	44.0%	46.6%	Econ 2	2333.9	1330.7	1256.0	14.7%	14.6%
Econ 3	148.4	85.6	87.7	44.3%	46.9%	Econ 3	2333.9	1320.6	1246.5	15.4%	15.3%
Econ 4	148.4	84.7	86.7	44.9%	47.4%	Econ 4	2333.9	1301.2	1228.2	16.6%	16.5%
Econ 5	148.4	83.6	85.6	45.6%	48.1%	Econ 5	2333.9	1277.4	1205.7	18.2%	18.0%
Tech Pot	148.4	86.3	88.4	43.8%	46.4%	Tech Pot	2333.9	1338.8	1263.7	14.2%	14.1%
Tech Soc	148.4	82.0	84.0	46.7%	49.1%	Tech Soc	2333.9	1245.1	1175.2	20.2%	20.1%
Compression											
Run	% FROM FROZEN										
	1988.0	2000.0	2010.0	2000	2010						
Frozen	53.2	46.9	48.5								
Natural	53.2	41.4	41.6	11.9%	14.1%						
Econ 1	53.2	23.5	23.6	50.0%	51.3%						
Econ 2	53.2	22.9	23.1	51.2%	52.4%						
Econ 3	53.2	22.6	22.7	51.9%	53.1%						
Econ 4	53.2	21.9	22.0	53.4%	54.6%						
Econ 5	53.2	21.0	21.1	55.3%	56.4%						
Tech Pot	53.2	23.4	23.5	50.3%	51.5%						
Tech Soc	53.2	19.9	20.0	57.7%	58.8%						

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Natural Run				
Technology	1988	2000	2010	
Machine Drive	3025.20	2086.73	1991.36	
Pump	422.90	317.50	306.93	
Air Displacement	148.36	141.45	140.63	
Compression	53.20	41.36	41.64	
Conveyance	66.88	54.14	54.72	
Other	2333.86	1532.28	1447.43	
Electrolysis	.00	.00	.00	
Process Heat	.00	.00	.00	
Light	144.38	125.29	120.26	
Other	15.92	16.99	18.32	
Total	3185.50	2229.00	2129.94	

Economic 2 Run				
Technology	1988	2000	2010	
Machine Drive	3025.20	1610.61	1534.50	
Pump	422.90	128.25	124.10	
Air Displacement	148.36	86.02	88.12	
Compression	53.20	22.93	23.07	
Conveyance	66.88	42.68	43.18	
Other	2333.86	1330.74	1256.04	
Electrolysis	.00	.00	.00	
Process Heat	.00	.00	.00	
Light	144.38	79.59	86.04	
Other	15.92	16.95	18.32	
Total	3185.50	1707.15	1638.86	

Frozen Run				
Technology	1988	2000	2010	
Machine Drive	3025.20	2166.53	2095.26	
Pump	422.90	350.30	355.22	
Air Displacement	148.36	153.74	165.00	
Compression	53.20	46.94	48.47	
Conveyance	66.88	54.90	55.52	
Other	2333.86	1560.65	1471.06	
Electrolysis	.00	.00	.00	
Process Heat	.00	.00	.00	
Light	144.38	155.08	167.53	
Other	15.92	17.07	18.46	
Total	3185.50	2338.68	2281.25	

Economic 1 Run				
Technology	1988	2000	2010	
Machine Drive	3025.20	1630.11	1553.06	
Pump	422.90	130.24	126.02	
Air Displacement	148.36	86.70	88.81	
Compression	53.20	23.46	23.61	
Conveyance	66.88	43.01	43.51	
Other	2333.86	1346.69	1271.09	
Electrolysis	.00	.00	.00	
Process Heat	.00	.00	.00	
Light	144.38	80.81	87.35	
Other	15.92	17.07	18.46	
Total	3185.50	1727.99	1658.86	

Economic 3 Run				
Technology	1988	2000	2010	
Machine Drive	3025.20	1598.12	1522.60	
Pump	422.90	126.92	122.81	
Air Displacement	148.36	85.57	87.65	
Compression	53.20	22.57	22.71	
Conveyance	66.88	42.46	42.96	
Other	2333.86	1320.60	1246.47	
Electrolysis	.00	.00	.00	
Process Heat	.00	.00	.00	
Light	144.38	78.79	85.17	
Other	15.92	16.86	18.23	
Total	3185.50	1693.77	1625.99	

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	3025.20	1574.05	1499.68	Machine Drive	3025.20	1544.42	1471.45
Pump	422.90	124.28	120.26	Pump	422.90	121.00	117.09
Air Displacement	148.36	84.68	86.74	Air Displacement	148.36	83.58	85.61
Compression	53.20	21.86	22.00	Compression	53.20	20.97	21.11
Conveyance	66.88	42.02	42.51	Conveyance	66.88	41.47	41.96
Other	2333.86	1301.21	1228.17	Other	2333.86	1277.39	1205.68
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	144.38	77.17	83.42	Light	144.38	75.15	81.24
Other	15.92	16.69	18.04	Other	15.92	16.48	17.81
Total	3185.50	1667.91	1601.14	Total	3185.50	1636.05	1570.50

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	3025.20	1620.95	1544.35	Machine Drive	3025.20	1504.30	1433.23
Pump	422.90	129.69	125.49	Pump	422.90	116.72	112.94
Air Displacement	148.36	86.33	88.43	Air Displacement	148.36	82.01	84.01
Compression	53.20	23.35	23.50	Compression	53.20	19.85	19.98
Conveyance	66.88	42.75	43.25	Conveyance	66.88	40.61	41.09
Other	2333.86	1338.83	1263.67	Other	2333.86	1245.11	1175.22
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	144.38	80.81	87.35	Light	144.38	72.73	78.62
Other	15.92	17.07	18.46	Other	15.92	16.22	17.53
Total	3185.50	1718.83	1650.16	Total	3185.50	1593.25	1529.38

Table 4: Low Growth Scenario, Electricity Demand for Process 1

 Industry: MINING Process: Coal Mining
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	670	723	783		
Natural	670	682	718	5.7%	8.3%
Econ 1	670	462	492	36.0%	37.1%
Econ 2	670	457	487	36.8%	37.8%
Econ 3	670	453	483	37.3%	38.3%
Econ 4	670	446	475	38.3%	39.3%
Econ 5	670	438	466	39.4%	40.4%
Tech Pot	670	460	490	36.4%	37.4%
Tech Soc	670	426	454	41.1%	42.0%

Table 5: Low Growth, Electrical Demand in Auxiliary Units for Process 1

 Industry: MINING Process: Coal Mining
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN		Conveyance				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	195.1	210.7	228.2			Frozen	29.8	32.2	34.8		
Natural	195.1	191.0	197.1	9.4%	13.6%	Natural	29.8	31.7	34.3	1.4%	1.4%
Econ 1	195.1	78.3	80.9	62.8%	64.5%	Econ 1	29.8	25.2	27.3	21.7%	21.6%
Econ 2	195.1	77.1	79.7	63.4%	65.1%	Econ 2	29.8	25.0	27.1	22.3%	22.2%
Econ 3	195.1	76.3	78.9	63.8%	65.4%	Econ 3	29.8	24.9	26.9	22.7%	22.6%
Econ 4	195.1	74.7	77.2	64.5%	66.1%	Econ 4	29.8	24.6	26.7	23.5%	23.4%
Econ 5	195.1	72.8	75.2	65.5%	67.0%	Econ 5	29.8	24.3	26.3	24.5%	24.4%
Tech Pot	195.1	78.0	80.6	63.0%	64.7%	Tech Pot	29.8	25.0	27.1	22.1%	22.1%
Tech Soc	195.1	70.2	72.5	66.7%	68.2%	Tech Soc	29.8	23.8	25.8	26.0%	26.0%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988.0	2000.0	2010.0	2000	2010
Frozen	134.6	145.3	157.3			Frozen	279.4	301.7	326.4		
Natural	134.6	133.7	134.1	8.0%	14.8%	Natural	279.4	296.2	321.2	1.8%	1.6%
Econ 1	134.6	81.9	84.7	43.6%	46.2%	Econ 1	279.4	260.3	282.0	13.7%	13.6%
Econ 2	134.6	81.3	84.0	44.0%	46.6%	Econ 2	279.4	257.2	278.7	14.7%	14.6%
Econ 3	134.6	80.9	83.6	44.3%	46.9%	Econ 3	279.4	255.3	276.6	15.4%	15.3%
Econ 4	134.6	80.0	82.7	44.9%	47.4%	Econ 4	279.4	251.5	272.5	16.6%	16.5%
Econ 5	134.6	79.0	81.6	45.6%	48.1%	Econ 5	279.4	246.9	267.5	18.2%	18.0%
Tech Pot	134.6	81.6	84.3	43.8%	46.4%	Tech Pot	279.4	258.8	280.4	14.2%	14.1%
Tech Soc	134.6	77.5	80.1	46.7%	49.1%	Tech Soc	279.4	240.7	260.8	20.2%	20.1%

Compression				% FROM FROZEN	
Run	1988.0	2000.0	2010.0	2000	2010
Frozen	30.8	33.2	36.0		
Natural	30.8	29.3	30.9	11.9%	14.1%
Econ 1	30.8	16.6	17.5	50.0%	51.3%
Econ 2	30.8	16.2	17.1	51.2%	52.4%
Econ 3	30.8	16.0	16.9	51.9%	53.1%
Econ 4	30.8	15.5	16.3	53.4%	54.6%
Econ 5	30.8	14.9	15.7	55.3%	56.4%
Tech Pot	30.8	16.5	17.5	50.3%	51.5%
Tech Soc	30.8	14.1	14.8	57.7%	58.8%

Table 6: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Coal Mining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	669.61	723.08	782.71
Pump	195.08	210.68	228.16
Air Displacement	134.58	145.30	157.32
Compression	30.81	33.24	36.00
Conveyance	29.78	32.16	34.83
Other	279.36	301.69	326.41
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	723.08	782.71

Natural Run Technology	1988	2000	2010
Machine Drive	669.61	681.86	717.66
Pump	195.08	190.96	197.15
Air Displacement	134.58	133.69	134.09
Compression	30.81	29.29	30.93
Conveyance	29.78	31.72	34.33
Other	279.36	296.21	321.17
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	681.86	717.66

Economic 1 Run Technology	1988	2000	2010
Machine Drive	669.61	462.42	492.50
Pump	195.08	78.33	80.95
Air Displacement	134.58	81.94	84.67
Compression	30.81	16.61	17.54
Conveyance	29.78	25.20	27.30
Other	279.36	260.33	282.04
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	462.42	492.50

Economic 2 Run Technology	1988	2000	2010
Machine Drive	669.61	456.92	486.65
Pump	195.08	77.13	79.71
Air Displacement	134.58	81.30	84.01
Compression	30.81	16.23	17.14
Conveyance	29.78	25.00	27.09
Other	279.36	257.25	278.70
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	456.92	486.65

Economic 3 Run Technology	1988	2000	2010
Machine Drive	669.61	453.35	482.85
Pump	195.08	76.33	78.88
Air Displacement	134.58	80.87	83.57
Compression	30.81	15.98	16.87
Conveyance	29.78	24.87	26.95
Other	279.36	255.29	276.58
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	453.35	482.85

Table 6: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Coal Mining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	669.61	446.42	475.47
Pump	195.08	74.75	77.24
Air Displacement	134.58	80.03	82.70
Compression	30.81	15.48	16.34
Conveyance	29.78	24.62	26.67
Other	279.36	251.54	272.52
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	446.42	475.47

Technological Run			
Technology	1988	2000	2010
Machine Drive	669.61	459.98	489.90
Pump	195.08	78.00	80.61
Air Displacement	134.58	81.59	84.31
Compression	30.81	16.54	17.46
Conveyance	29.78	25.04	27.13
Other	279.36	258.81	280.39
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	459.98	489.90

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	669.61	437.85	466.36
Pump	195.08	72.78	75.21
Air Displacement	134.58	78.99	81.63
Compression	30.81	14.85	15.68
Conveyance	29.78	24.30	26.32
Other	279.36	246.94	267.53
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	437.85	466.36

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	669.61	426.25	454.02
Pump	195.08	70.20	72.55
Air Displacement	134.58	77.51	80.09
Compression	30.81	14.06	14.84
Conveyance	29.78	23.79	25.78
Other	279.36	240.70	260.77
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	669.61	426.25	454.02

Table 7: Low Growth Scenario, Electricity Demand for Process 2

Industry: MINING Process: Metal Mining
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	2356	1443	1313		
Natural	2356	1405	1274	2.7%	3.0%
Econ 1	2356	1168	1061	19.1%	19.2%
Econ 2	2356	1154	1048	20.1%	20.2%
Econ 3	2356	1145	1040	20.7%	20.8%
Econ 4	2356	1128	1024	21.9%	22.0%
Econ 5	2356	1107	1005	23.3%	23.4%
Tech Pot	2356	1161	1054	19.6%	19.7%
Tech Soc	2356	1078	979	25.3%	25.4%

Table 8: Low Growth, Electrical Demand in Auxiliary Units

Industry: MINING Process: Metal Mining
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	227.8	139.6	127.1			Frozen	37.1	22.7	20.7		
Natural	227.8	126.5	109.8	9.4%	13.6%	Natural	37.1	22.4	20.4	1.4%	1.4%
Econ 1	227.8	51.9	45.1	62.8%	64.5%	Econ 1	37.1	17.8	16.2	21.7%	21.6%
Econ 2	227.8	51.1	44.4	63.4%	65.1%	Econ 2	37.1	17.7	16.1	22.3%	22.2%
Econ 3	227.8	50.6	43.9	63.8%	65.4%	Econ 3	37.1	17.6	16.0	22.7%	22.6%
Econ 4	227.8	49.5	43.0	64.5%	66.1%	Econ 4	37.1	17.4	15.8	23.5%	23.4%
Econ 5	227.8	48.2	41.9	65.5%	67.0%	Econ 5	37.1	17.2	15.6	24.5%	24.4%
Tech Pot	227.8	51.7	44.9	63.0%	64.7%	Tech Pot	37.1	17.7	16.1	22.1%	22.1%
Tech Soc	227.8	46.5	40.4	66.7%	68.2%	Tech Soc	37.1	16.8	15.3	26.0%	26.0%

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988.0	2000.0	2010.0	2000	2010
Frozen	13.8	8.4	7.7			Frozen	2054.5	1259.0	1144.6		
Natural	13.8	7.8	6.5	8.0%	14.8%	Natural	2054.5	1236.1	1126.3	1.8%	1.6%
Econ 1	13.8	4.8	4.1	43.6%	46.2%	Econ 1	2054.5	1086.4	989.1	13.7%	13.6%
Econ 2	13.8	4.7	4.1	44.0%	46.6%	Econ 2	2054.5	1073.5	977.3	14.7%	14.6%
Econ 3	13.8	4.7	4.1	44.3%	46.9%	Econ 3	2054.5	1065.3	969.9	15.4%	15.3%
Econ 4	13.8	4.6	4.0	44.9%	47.4%	Econ 4	2054.5	1049.7	955.6	16.6%	16.5%
Econ 5	13.8	4.6	4.0	45.6%	48.1%	Econ 5	2054.5	1030.5	938.2	18.2%	18.0%
Tech Pot	13.8	4.7	4.1	43.8%	46.4%	Tech Pot	2054.5	1080.0	983.3	14.2%	14.1%
Tech Soc	13.8	4.5	3.9	46.7%	49.1%	Tech Soc	2054.5	1004.4	914.4	20.2%	20.1%

Compression					
% FROM FROZEN					
Run	1988.0	2000.0	2010.0	2000	2010
Frozen	22.4	13.7	12.5		
Natural	22.4	12.1	10.7	11.9%	14.1%
Econ 1	22.4	6.9	6.1	50.0%	51.3%
Econ 2	22.4	6.7	5.9	51.2%	52.4%
Econ 3	22.4	6.6	5.8	51.9%	53.1%
Econ 4	22.4	6.4	5.7	53.4%	54.6%
Econ 5	22.4	6.1	5.4	55.3%	56.4%
Tech Pot	22.4	6.8	6.0	50.3%	51.5%
Tech Soc	22.4	5.8	5.1	57.7%	58.8%

Table 9: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Structural/Veneer
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	60.43	50.02	51.32
Pump	11.02	9.92	10.71
Air Displacement	4.96	4.49	4.85
Compression	.00	.00	.00
Conveyance	19.91	16.49	17.04
Other	24.53	19.13	18.73
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	50.02	51.32

Natural Run Technology	1988	2000	2010
Machine Drive	60.43	47.99	48.32
Pump	11.02	8.97	9.22
Air Displacement	4.96	4.00	3.99
Compression	.00	.00	.00
Conveyance	19.91	16.18	16.69
Other	24.53	18.86	18.42
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	47.99	48.32

Economic 1 Run Technology	1988	2000	2010
Machine Drive	60.43	37.14	37.45
Pump	11.02	3.67	3.78
Air Displacement	4.96	2.50	2.57
Compression	.00	.00	.00
Conveyance	19.91	14.23	14.70
Other	24.53	16.75	16.40
Electrolysis	.00	.00	.00
Process Heat	.00	.06	.09
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	37.21	37.55

Economic 2 Run Technology	1988	2000	2010
Machine Drive	60.43	36.83	37.13
Pump	11.02	3.62	3.72
Air Displacement	4.96	2.45	2.53
Compression	.00	.00	.00
Conveyance	19.91	14.07	14.54
Other	24.53	16.68	16.34
Electrolysis	.00	.00	.00
Process Heat	.00	.04	.06
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	36.87	37.19

Economic 3 Run Technology	1988	2000	2010
Machine Drive	60.43	36.61	36.91
Pump	11.02	3.58	3.69
Air Displacement	4.96	2.42	2.49
Compression	.00	.00	.00
Conveyance	19.91	13.97	14.44
Other	24.53	16.63	16.29
Electrolysis	.00	.00	.00
Process Heat	.00	.02	.03
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	36.63	36.94

Table 9: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Structural/Veneer
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	60.43	36.12	36.41	Machine Drive	60.43	35.43	35.72
Pump	11.02	3.50	3.61	Pump	11.02	3.41	3.51
Air Displacement	4.96	2.36	2.43	Air Displacement	4.96	2.29	2.36
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	19.91	13.77	14.23	Conveyance	19.91	13.52	13.97
Other	24.53	16.49	16.14	Other	24.53	16.22	15.88
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.01	.01	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	60.43	36.13	36.43	Total	60.43	35.44	35.72
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	60.43	35.90	36.28	Machine Drive	60.43	33.95	34.28
Pump	11.02	3.66	3.77	Pump	11.02	3.29	3.39
Air Displacement	4.96	2.49	2.56	Air Displacement	4.96	2.19	2.25
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	19.91	14.00	14.49	Conveyance	19.91	13.02	13.47
Other	24.53	15.76	15.47	Other	24.53	15.45	15.16
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	60.43	35.90	36.28	Total	60.43	33.95	34.28

Table 10: High Growth Scenario, Electricity Demand for Process 3

Industry:WOODPROD Process: Remanufacturing
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	67	195	280		
Natural	67	193	274	1.5%	2.2%
Econ 1	67	169	238	13.4%	15.0%
Econ 2	67	168	236	13.9%	15.5%
Econ 3	67	168	235	14.3%	15.9%
Econ 4	67	166	233	15.1%	16.8%
Econ 5	67	163	229	16.6%	18.2%
Tech Pot	67	157	222	19.5%	20.7%
Tech Soc	67	152	214	22.3%	23.7%

Table 11: High Growth, Electrical Demand in Auxiliary Units

Industry:WOODPROD Process: Remanufacturing
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.9	1.9	9.4			Frozen	3.64	56.59	84.38		
Natural	.9	1.7	8.1	9.6%	13.9%	Natural	3.64	55.56	82.75	1.8%	1.9%
Econ 1	.9	.7	3.3	63.0%	64.7%	Econ 1	3.64	48.84	72.82	13.7%	13.7%
Econ 2	.9	.7	3.3	63.5%	65.2%	Econ 2	3.64	48.32	72.04	14.6%	14.6%
Econ 3	.9	.7	3.2	63.9%	65.6%	Econ 3	3.64	47.97	71.52	15.2%	15.2%
Econ 4	.9	.7	3.2	64.7%	66.3%	Econ 4	3.64	47.28	70.49	16.5%	16.5%
Econ 5	.9	.7	3.1	65.6%	67.2%	Econ 5	3.64	46.42	69.21	18.0%	18.0%
Tech Pot	.9	.7	3.3	63.1%	64.8%	Tech Pot	3.64	46.40	69.57	18.0%	17.6%
Tech Soc	.9	.6	3.0	66.8%	68.4%	Tech Soc	3.64	43.16	64.70	23.7%	23.3%

Air Displacement						Process drives					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.37	.82	3.98			Frozen	61.86	136.16	182.18		
Natural	.37	.73	3.28	11.0%	17.7%	Natural	61.86	134.50	179.78	1.2%	1.3%
Econ 1	.37	.45	2.11	44.4%	46.9%	Econ 1	61.86	119.30	159.63	12.4%	12.4%
Econ 2	.37	.45	2.07	45.4%	47.9%	Econ 2	61.86	118.86	159.04	12.7%	12.7%
Econ 3	.37	.44	2.05	46.0%	48.5%	Econ 3	61.86	118.52	158.58	13.0%	13.0%
Econ 4	.37	.43	2.00	47.4%	49.8%	Econ 4	61.86	117.50	157.22	13.7%	13.7%
Econ 5	.37	.42	1.93	49.1%	51.4%	Econ 5	61.86	115.64	154.72	15.1%	15.1%
Tech Pot	.37	.45	2.10	44.6%	47.2%	Tech Pot	61.86	109.89	147.10	19.3%	19.3%
Tech Soc	.37	.40	1.85	51.2%	53.5%	Tech Soc	61.86	107.70	144.16	20.9%	20.9%

Compression					
Run	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 12: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD Process: Remanufacturing
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	66.74	195.49	279.89
Pump	.87	1.92	9.36
Air Displacement	.37	.82	3.98
Compression	.00	.00	.00
Conveyance	3.64	56.59	84.38
Other	61.86	136.16	182.18
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	195.49	279.89

Natural Run			
Technology	1988	2000	2010
Machine Drive	66.74	192.52	273.87
Pump	.87	1.74	8.06
Air Displacement	.37	.73	3.28
Compression	.00	.00	.00
Conveyance	3.64	55.56	82.75
Other	61.86	134.50	179.78
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	192.52	273.87

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	66.74	169.31	237.86
Pump	.87	.71	3.30
Air Displacement	.37	.45	2.11
Compression	.00	.00	.00
Conveyance	3.64	48.84	72.82
Other	61.86	119.30	159.63
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	169.31	237.86

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	66.74	168.33	236.41
Pump	.87	.70	3.25
Air Displacement	.37	.45	2.07
Compression	.00	.00	.00
Conveyance	3.64	48.32	72.04
Other	61.86	118.86	159.04
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	168.33	236.41

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	66.74	167.63	235.37
Pump	.87	.69	3.22
Air Displacement	.37	.44	2.05
Compression	.00	.00	.00
Conveyance	3.64	47.97	71.52
Other	61.86	118.52	158.58
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	167.63	235.37

Table 12: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Remanufacturing
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	66.74	165.89	232.86
Pump	.87	.68	3.15
Air Displacement	.37	.43	2.00
Compression	.00	.00	.00
Conveyance	3.64	47.28	70.49
Other	61.86	117.50	157.22
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	165.89	232.86

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	66.74	163.13	228.93
Pump	.87	.66	3.07
Air Displacement	.37	.42	1.93
Compression	.00	.00	.00
Conveyance	3.64	46.42	69.21
Other	61.86	115.64	154.72
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	163.13	228.93

Technological Run			
Technology	1988	2000	2010
Machine Drive	66.74	157.46	222.06
Pump	.87	.71	3.29
Air Displacement	.37	.45	2.10
Compression	.00	.00	.00
Conveyance	3.64	46.40	69.57
Other	61.86	109.89	147.10
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	157.46	222.06

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	66.74	151.89	213.66
Pump	.87	.64	2.96
Air Displacement	.37	.40	1.85
Compression	.00	.00	.00
Conveyance	3.64	43.16	64.70
Other	61.86	107.70	144.16
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	151.89	213.66

Table 1: Low Growth Scenario, Electricity Demand

Industry:WOODPROD

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	2057	2223	2222		
Natural	2057	2154	2120	3.1%	4.6%
Econ 1	2057	1905	1896	14.3%	14.7%
Econ 2	2057	1885	1876	15.2%	15.5%
Econ 3	2057	1871	1863	15.8%	16.2%
Econ 4	2057	1842	1834	17.1%	17.4%
Econ 5	2057	1803	1795	18.9%	19.2%
Tech Pot	2057	1803	1794	18.9%	19.2%
Tech Soc	2057	1677	1671	24.5%	24.8%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

Industry:WOODPROD

Cons. Pot. Rev. Low Output

Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN		Conveyance				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	11.9	9.5	14.1			Frozen	337.35	363.75	371.33		
Natural	11.9	8.6	12.1	9.6%	13.9%	Natural	337.35	360.77	369.77	.8%	.4%
Econ 1	11.9	3.5	5.0	63.0%	64.7%	Econ 1	337.35	319.21	325.65	12.2%	12.3%
Econ 2	11.9	3.5	4.9	63.6%	65.2%	Econ 2	337.35	315.78	322.15	13.2%	13.2%
Econ 3	11.9	3.4	4.8	63.9%	65.6%	Econ 3	337.35	313.48	319.80	13.8%	13.9%
Econ 4	11.9	3.4	4.7	64.7%	66.3%	Econ 4	337.35	308.91	315.15	15.1%	15.1%
Econ 5	11.9	3.3	4.6	65.6%	67.2%	Econ 5	337.35	303.23	309.35	16.6%	16.7%
Tech Pot	11.9	3.5	4.9	63.1%	64.8%	Tech Pot	337.35	310.39	316.62	14.7%	14.7%
Tech Soc	11.9	3.1	4.5	66.8%	68.4%	Tech Soc	337.35	288.67	294.46	20.6%	20.7%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	182.92	205.86	203.82			Frozen	739.82	764.18	770.79		
Natural	182.92	184.46	168.00	10.4%	17.6%	Natural	739.82	765.21	776.74	-.1%	-.8%
Econ 1	182.92	114.56	108.19	44.4%	46.9%	Econ 1	739.82	684.32	689.82	10.5%	10.5%
Econ 2	182.92	112.48	106.22	45.4%	47.9%	Econ 2	739.82	681.71	687.19	10.8%	10.8%
Econ 3	182.92	111.08	104.90	46.0%	48.5%	Econ 3	739.82	679.66	685.13	11.1%	11.1%
Econ 4	182.92	108.31	102.28	47.4%	49.8%	Econ 4	739.82	673.65	679.08	11.8%	11.9%
Econ 5	182.92	104.86	99.02	49.1%	51.4%	Econ 5	739.82	662.76	668.10	13.3%	13.3%
Tech Pot	11.90	114.05	107.70	44.6%	47.2%	Tech Pot	739.82	592.07	598.02	22.5%	22.4%
Tech Soc	182.92	100.36	94.78	51.2%	53.5%	Tech Soc	739.82	580.23	586.06	24.1%	24.0%

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	14.34	13.41	13.15		
Natural	14.34	9.83	9.39	26.7%	28.6%
Econ 1	14.34	5.42	5.18	59.6%	60.6%
Econ 2	14.34	5.28	5.04	60.7%	61.7%
Econ 3	14.34	5.17	4.94	61.4%	62.4%
Econ 4	14.34	4.96	4.74	63.0%	63.9%
Econ 5	14.34	4.70	4.48	65.0%	65.9%
Tech Pot	14.34	4.96	4.74	63.0%	63.9%
Tech Soc	14.34	4.12	3.93	69.3%	70.1%

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Frozen Run

Technology	1988	2000	2010
Machine Drive	1286.33	1356.69	1373.16
Pump	11.90	9.49	14.07
Air Displacement	182.92	205.86	203.82
Compression	14.34	13.41	13.15
Conveyance	337.35	363.75	371.33
Other	739.82	764.18	770.79
Electolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	246.75	226.61	221.51
Other	21.16	19.60	19.13
Total	2057.09	2223.24	2221.86

Natural Run

Technology	1988	2000	2010
Machine Drive	1286.33	1328.85	1336.02
Pump	11.90	8.58	12.11
Air Displacement	182.92	184.46	168.00
Compression	14.34	9.83	9.39
Conveyance	337.35	360.77	369.77
Other	739.82	765.21	776.74
Electolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	246.75	184.81	156.38
Other	21.16	19.56	19.10
Total	2057.09	2153.57	2119.56

Economic 1 Run

Technology	1988	2000	2010
Machine Drive	1286.33	1127.02	1133.80
Pump	11.90	3.51	4.97
Air Displacement	182.92	114.56	108.19
Compression	14.34	5.42	5.18
Conveyance	337.35	319.21	325.65
Other	739.82	684.32	689.82
Electolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	246.75	137.90	135.03
Other	21.16	19.50	19.09
Total	2057.09	1904.76	1896.00

Economic 2 Run

Technology	1988	2000	2010
Machine Drive	1286.33	1118.70	1125.49
Pump	11.90	3.46	4.89
Air Displacement	182.92	112.48	106.22
Compression	14.34	5.28	5.04
Conveyance	337.35	315.78	322.15
Other	739.82	681.71	687.19
Electolysis	.00	.00	.00
Process Heat	502.85	611.03	598.95
Light	246.75	135.83	133.01
Other	21.16	19.35	18.95
Total	2057.09	1884.92	1876.39

Economic 3 Efficiency Run

Technology	1988	2000	2010
Machine Drive	1286.33	1112.82	1119.62
Pump	11.90	3.42	4.84
Air Displacement	182.92	111.08	104.90
Compression	14.34	5.17	4.94
Conveyance	337.35	313.48	319.80
Other	739.82	679.66	685.13
Electolysis	.00	.00	.00
Process Heat	502.85	604.83	592.87
Light	246.75	134.46	131.66
Other	21.16	19.25	18.85
Total	2057.09	1871.36	1863.00

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Efficiency Run

Technology	1988	2000	2010
Machine Drive	1286.33	1099.19	1105.99
Pump	11.90	3.35	4.74
Air Displacement	182.92	108.31	102.28
Compression	14.34	4.96	4.74
Conveyance	337.35	308.91	315.15
Other	739.82	673.65	679.08
Electolysis	.00	.00	.00
Process Heat	502.85	592.42	580.71
Light	246.75	131.70	128.96
Other	21.16	19.06	18.66
Total	2057.09	1842.37	1834.32

Economic 5 Efficiency Run

Technology	1988	2000	2010
Machine Drive	1286.33	1078.81	1085.58
Pump	11.90	3.26	4.62
Air Displacement	182.92	104.86	99.02
Compression	14.34	4.70	4.48
Conveyance	337.35	303.23	309.35
Other	739.82	662.76	668.10
Electolysis	.00	.00	.00
Process Heat	502.85	576.91	565.51
Light	246.75	128.25	125.58
Other	21.16	18.82	18.42
Total	2057.09	1802.79	1795.09

Technical Efficiency Run

Technology	1988	2000	2010
Machine Drive	1286.33	1024.98	1032.03
Pump	11.90	3.50	4.95
Air Displacement	182.92	114.05	107.70
Compression	14.34	4.96	4.74
Conveyance	337.35	310.39	316.62
Other	739.82	592.07	598.02
Electolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	246.75	137.90	135.03
Other	21.16	19.50	19.09
Total	2057.09	1802.71	1794.23

Technical Efficiency Run

Technology	1988	2000	2010
Machine Drive	1286.33	976.53	983.68
Pump	11.90	3.15	4.45
Air Displacement	182.92	100.36	94.78
Compression	14.34	4.12	3.93
Conveyance	337.35	288.67	294.46
Other	739.82	580.23	586.06
Electolysis	.00	.00	.00
Process Heat	502.85	558.30	547.26
Light	246.75	124.11	121.53
Other	21.16	18.52	18.14
Total	2057.09	1677.47	1670.61

Table 9: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Metal Mining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1443.45	1312.55
Pump	227.82	139.61	127.06
Air Displacement	13.78	8.44	7.68
Compression	22.39	13.71	12.47
Conveyance	37.10	22.73	20.69
Other	2054.50	1258.95	1144.65
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1443.45	1312.55

Natural Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1404.87	1273.70
Pump	227.82	126.54	109.79
Air Displacement	13.78	7.77	6.55
Compression	22.39	12.08	10.72
Conveyance	37.10	22.42	20.39
Other	2054.50	1236.07	1126.26
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1404.87	1273.70

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1167.69	1060.56
Pump	227.82	51.91	45.08
Air Displacement	13.78	4.76	4.13
Compression	22.39	6.85	6.08
Conveyance	37.10	17.81	16.22
Other	2054.50	1086.36	989.05
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1167.69	1060.56

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1153.69	1047.85
Pump	227.82	51.11	44.39
Air Displacement	13.78	4.72	4.10
Compression	22.39	6.69	5.94
Conveyance	37.10	17.67	16.09
Other	2054.50	1073.49	977.34
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1153.69	1047.85

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1144.77	1039.75
Pump	227.82	50.58	43.93
Air Displacement	13.78	4.70	4.08
Compression	22.39	6.59	5.84
Conveyance	37.10	17.58	16.01
Other	2054.50	1065.31	969.89
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1144.77	1039.75

Table 9: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: MINING Process: Metal Mining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1127.64	1024.21
Pump	227.82	49.53	43.02
Air Displacement	13.78	4.65	4.04
Compression	22.39	6.38	5.66
Conveyance	37.10	17.40	15.84
Other	2054.50	1049.67	955.65
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1127.64	1024.21

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1106.57	1005.09
Pump	227.82	48.23	41.88
Air Displacement	13.78	4.59	3.99
Compression	22.39	6.12	5.43
Conveyance	37.10	17.17	15.64
Other	2054.50	1030.45	938.15
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1106.57	1005.09

Technological Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1160.97	1054.45
Pump	227.82	51.69	44.89
Air Displacement	13.78	4.74	4.12
Compression	22.39	6.82	6.05
Conveyance	37.10	17.70	16.12
Other	2054.50	1080.02	983.28
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1160.97	1054.45

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	2355.58	1078.05	979.21
Pump	227.82	46.52	40.40
Air Displacement	13.78	4.50	3.91
Compression	22.39	5.80	5.14
Conveyance	37.10	16.82	15.31
Other	2054.50	1004.42	914.45
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	2355.59	1078.05	979.21



PART 3

WOOD PRODUCTS

Table 1: High Growth Scenario, Electricity Demand

Industry:WOODPROD

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	2057	2621	2958		
Natural	2057	2533	2821	3.3%	4.7%
Econ 1	2057	2245	2524	14.3%	14.7%
Econ 2	2057	2222	2497	15.2%	15.6%
Econ 3	2057	2206	2480	15.8%	16.2%
Econ 4	2057	2171	2441	17.1%	17.5%
Econ 5	2057	2125	2389	18.9%	19.2%
Tech Pot	2057	2125	2388	18.9%	19.3%
Tech Soc	2057	1977	2224	24.6%	24.8%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry:WOODPROD

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	11.9	11.8	20.1			Run	337.35	429.43	495.63		
Frozen	11.9	11.8	20.1			Frozen	337.35	429.43	495.63		
Natural	11.9	10.7	17.3	9.6%	13.9%	Natural	337.35	426.26	493.62	.7%	.4%
Econ 1	11.9	4.4	7.1	63.0%	64.7%	Econ 1	337.35	376.83	434.62	12.2%	12.3%
Econ 2	11.9	4.3	7.0	63.5%	65.2%	Econ 2	337.35	372.78	429.95	13.2%	13.3%
Econ 3	11.9	4.3	6.9	63.9%	65.6%	Econ 3	337.35	370.07	426.82	13.8%	13.9%
Econ 4	11.9	4.2	6.8	64.7%	66.3%	Econ 4	337.35	364.68	420.61	15.1%	15.1%
Econ 5	11.9	4.1	6.6	65.6%	67.2%	Econ 5	337.35	357.97	412.87	16.6%	16.7%
Tech Pot	11.9	4.4	7.1	63.1%	64.8%	Tech Pot	337.35	366.44	422.61	14.7%	14.7%
Tech Soc	11.9	3.9	6.4	66.8%	68.4%	Tech Soc	337.35	340.79	393.02	20.6%	20.7%

Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	182.92	242.54	271.33			Run	739.82	901.01	1025.87		
Frozen	182.92	242.54	271.33			Frozen	739.82	901.01	1025.87		
Natural	182.92	215.87	223.33	11.0%	17.7%	Natural	739.82	903.23	1034.03	-.2%	-.8%
Econ 1	182.92	134.97	144.02	44.4%	46.9%	Econ 1	739.82	806.81	918.06	10.5%	10.5%
Econ 2	182.92	132.51	141.40	45.4%	47.9%	Econ 2	739.82	803.74	914.57	10.8%	10.8%
Econ 3	182.92	130.87	139.65	46.0%	48.5%	Econ 3	739.82	801.32	911.82	11.1%	11.1%
Econ 4	182.92	127.61	136.17	47.4%	49.8%	Econ 4	739.82	794.24	903.77	11.8%	11.9%
Econ 5	182.92	123.54	131.83	49.1%	51.4%	Econ 5	739.82	781.40	889.17	13.3%	13.3%
Tech Pot	11.90	134.36	143.38	44.6%	47.2%	Tech Pot	739.82	698.01	795.85	22.5%	22.4%
Tech Soc	182.92	118.24	126.17	51.2%	53.5%	Tech Soc	739.82	684.05	779.94	24.1%	24.0%

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run	14.34	15.78	17.47		
Frozen	14.34	15.78	17.47		
Natural	14.34	11.57	12.47	26.7%	28.6%
Econ 1	14.34	6.38	6.88	59.6%	60.6%
Econ 2	14.34	6.21	6.69	60.7%	61.7%
Econ 3	14.34	6.09	6.56	61.4%	62.4%
Econ 4	14.34	5.84	6.30	63.0%	63.9%
Econ 5	14.34	5.52	5.96	65.0%	65.9%
Tech Pot	14.34	5.84	6.30	63.0%	63.9%
Tech Soc	14.34	4.85	5.23	69.3%	70.1%

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROO

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	1286.33	1600.61	1830.37
Pump	11.90	11.84	20.07
Air Displacement	182.92	242.54	271.33
Compression	14.34	15.78	17.47
Conveyance	337.35	429.43	495.63
Other	739.82	901.01	1025.87
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	246.75	267.10	294.79
Other	21.16	23.09	25.45
Total	2057.09	2620.73	2958.32

Natural Run Technology	1988	2000	2010
Machine Drive	1286.33	1567.62	1780.72
Pump	11.90	10.70	17.28
Air Displacement	182.92	215.87	223.33
Compression	14.34	11.57	12.47
Conveyance	337.35	426.26	493.62
Other	739.82	903.23	1034.03
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	246.75	212.57	206.72
Other	21.16	23.06	25.43
Total	2057.09	2533.20	2820.58

Economic 1 Run Technology	1988	2000	2010
Machine Drive	1286.33	1329.38	1510.67
Pump	11.90	4.38	7.08
Air Displacement	182.92	134.97	144.02
Compression	14.34	6.38	6.88
Conveyance	337.35	376.83	434.62
Other	739.82	806.81	918.06
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	246.75	162.61	179.74
Other	21.16	22.99	25.41
Total	2057.09	2244.92	2523.54

Economic 2 Run Technology	1988	2000	2010
Machine Drive	1286.33	1319.56	1499.59
Pump	11.90	4.32	6.98
Air Displacement	182.92	132.51	141.40
Compression	14.34	6.21	6.69
Conveyance	337.35	372.78	429.95
Other	739.82	803.74	914.57
Electrolysis	.00	.00	.00
Process Heat	502.85	718.99	795.60
Light	246.75	160.17	177.05
Other	21.16	22.82	25.22
Total	2057.09	2221.53	2497.46

Economic 3 Efficiency Run Technology	1988	2000	2010
Machine Drive	1286.33	1312.62	1491.77
Pump	11.90	4.27	6.90
Air Displacement	182.92	130.87	139.65
Compression	14.34	6.09	6.56
Conveyance	337.35	370.07	426.82
Other	739.82	801.32	911.82
Electrolysis	.00	.00	.00
Process Heat	502.85	711.69	787.52
Light	246.75	158.54	175.25
Other	21.16	22.70	25.10
Total	2057.09	2205.56	2479.63

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Efficiency Run			
Technology	1988	2000	2010
Machine Drive	1286.33	1296.55	1473.61
Pump	11.90	4.18	6.76
Air Displacement	182.92	127.61	136.17
Compression	14.34	5.84	6.30
Conveyance	337.35	364.68	420.61
Other	739.82	794.24	903.77
Electolysis	.00	.00	.00
Process Heat	502.85	697.09	771.36
Light	246.75	155.29	171.66
Other	21.16	22.47	24.84
Total	2057.09	2171.41	2441.47

Economic 5 Efficiency Run			
Technology	1988	2000	2010
Machine Drive	1286.33	1272.50	1446.41
Pump	11.90	4.07	6.58
Air Displacement	182.92	123.54	131.83
Compression	14.34	5.52	5.96
Conveyance	337.35	357.97	412.87
Other	739.82	781.40	889.17
Electolysis	.00	.00	.00
Process Heat	502.85	678.85	751.17
Light	246.75	151.23	167.16
Other	21.16	22.19	24.52
Total	2057.09	2124.76	2389.27

Technical Efficiency Run			
Technology	1988	2000	2010
Machine Drive	1286.33	1209.02	1375.19
Pump	11.90	4.37	7.06
Air Displacement	182.92	134.36	143.38
Compression	14.34	5.84	6.30
Conveyance	337.35	366.44	422.61
Other	739.82	698.01	795.85
Electolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	246.75	162.61	179.74
Other	21.16	22.99	25.41
Total	2057.09	2124.56	2388.06

Technical Efficiency Run			
Technology	1988	2000	2010
Machine Drive	1286.33	1151.86	1310.71
Pump	11.90	3.93	6.35
Air Displacement	182.92	118.24	126.17
Compression	14.34	4.85	5.23
Conveyance	337.35	340.79	393.02
Other	739.82	684.05	779.94
Electolysis	.00	.00	.00
Process Heat	502.85	656.95	726.94
Light	246.75	146.35	161.77
Other	21.16	21.84	24.14
Total	2057.09	1976.99	2223.56

Table 4: High Growth Scenario, Electricity Demand for Process 1

Industry:WOODPROD Process: Saw mills
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	1662	2085	2307		
Natural	1662	2057	2266	1.3%	1.8%
Econ 1	1662	1853	2043	11.1%	11.4%
Econ 2	1662	1833	2022	12.1%	12.4%
Econ 3	1662	1820	2007	12.7%	13.0%
Econ 4	1662	1792	1976	14.1%	14.4%
Econ 5	1662	1753	1933	15.9%	16.2%
Tech Pot	1662	1746	1925	16.3%	16.6%
Tech Soc	1662	1623	1790	22.2%	22.4%

Table 5: High Growth, Electrical Demand in Auxiliary Units for Process 1

Industry:WOODPROD Process: Saw mills
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping				% FROM FROZEN	
	1988	2000	2010	2000	2010
Run					
Frozen	.0	.0	.0		
Natural	.0	.0	.0		
Econ 1	.0	.0	.0		
Econ 2	.0	.0	.0		
Econ 3	.0	.0	.0		
Econ 4	.0	.0	.0		
Econ 5	.0	.0	.0		
Tech Pot	.0	.0	.0		
Tech Soc	.0	.0	.0		

Conveyance				% FROM FROZEN	
	1988	2000	2010	2000	2010
Run					
Frozen	313.80	356.35	394.22		
Natural	313.80	354.53	394.18	.5%	.0%
Econ 1	313.80	313.76	347.10	12.0%	12.0%
Econ 2	313.80	310.39	343.37	12.9%	12.9%
Econ 3	313.80	308.12	340.86	13.5%	13.5%
Econ 4	313.80	303.63	335.89	14.8%	14.8%
Econ 5	313.80	298.03	329.70	16.4%	16.4%
Tech Pot	313.80	306.04	338.55	14.1%	14.1%
Tech Soc	313.80	284.61	314.85	20.1%	20.1%

Air Displacement				% FROM FROZEN	
	1988	2000	2010	2000	2010
Run					
Frozen	177.59	237.23	262.51		
Natural	177.59	211.14	216.06	11.0%	17.7%
Econ 1	177.59	132.02	139.34	44.4%	46.9%
Econ 2	177.59	129.61	136.80	45.4%	47.9%
Econ 3	177.59	128.01	135.11	46.0%	48.5%
Econ 4	177.59	124.81	131.74	47.4%	49.8%
Econ 5	177.59	120.84	127.54	49.1%	51.4%
Tech Pot	177.59	131.42	138.72	44.6%	47.2%
Tech Soc	177.59	115.65	122.07	51.2%	53.5%

Process drives				% FROM FROZEN	
	1988	2000	2010	2000	2010
Run					
Frozen	653.42	745.73	824.97		
Natural	653.42	749.88	835.83	-.6%	-1.3%
Econ 1	653.42	670.76	742.04	10.1%	10.1%
Econ 2	653.42	668.19	739.19	10.4%	10.4%
Econ 3	653.42	666.17	736.95	10.7%	10.7%
Econ 4	653.42	660.25	730.41	11.5%	11.5%
Econ 5	653.42	649.54	718.56	12.9%	12.9%
Tech Pot	653.42	572.35	633.28	23.2%	23.2%
Tech Soc	653.42	560.91	620.62	24.8%	24.8%

Compression				% FROM FROZEN	
	1988	2000	2010	2000	2010
Run					
Frozen	14.34	15.78	17.47		
Natural	14.34	11.57	12.47	26.7%	28.6%
Econ 1	14.34	6.38	6.88	59.6%	60.6%
Econ 2	14.34	6.21	6.69	60.7%	61.7%
Econ 3	14.34	6.09	6.56	61.4%	62.4%
Econ 4	14.34	5.84	6.30	63.0%	63.9%
Econ 5	14.34	5.52	5.96	65.0%	65.9%
Tech Pot	14.34	5.84	6.30	63.0%	63.9%
Tech Soc	14.34	4.85	5.23	69.3%	70.1%

Table 6: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Saw mills
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1355.10	1499.16
Pump	.00	.00	.00
Air Displacement	177.59	237.23	262.51
Compression	14.34	15.78	17.47
Conveyance	313.80	356.35	394.22
Other	653.42	745.73	824.97
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	2085.04	2306.87

Natural Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1327.11	1458.54
Pump	.00	.00	.00
Air Displacement	177.59	211.14	216.06
Compression	14.34	11.57	12.47
Conveyance	313.80	354.53	394.18
Other	653.42	749.88	835.83
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	2057.05	2266.25

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1122.93	1235.36
Pump	.00	.00	.00
Air Displacement	177.59	132.02	139.34
Compression	14.34	6.38	6.88
Conveyance	313.80	313.76	347.10
Other	653.42	670.76	742.04
Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1852.87	2043.07

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1114.40	1226.06
Pump	.00	.00	.00
Air Displacement	177.59	129.61	136.80
Compression	14.34	6.21	6.69
Conveyance	313.80	310.39	343.37
Other	653.42	668.19	739.19
Electrolysis	.00	.00	.00
Process Heat	502.85	718.99	795.60
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1833.39	2021.65

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1108.39	1219.49
Pump	.00	.00	.00
Air Displacement	177.59	128.01	135.11
Compression	14.34	6.09	6.56
Conveyance	313.80	308.12	340.86
Other	653.42	666.17	736.95
Electrolysis	.00	.00	.00
Process Heat	502.85	711.69	787.52
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1820.08	2007.01

Table 6: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD Process: Saw mills
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1159.16	1094.54	1204.33	Machine Drive	1159.16	1073.94	1181.76
Pump	.00	.00	.00	Pump	.00	.00	.00
Air Displacement	177.59	124.81	131.74	Air Displacement	177.59	120.84	127.54
Compression	14.34	5.84	6.30	Compression	14.34	5.52	5.96
Conveyance	313.80	303.63	335.89	Conveyance	313.80	298.03	329.70
Other	653.42	660.25	730.41	Other	653.42	649.54	718.56
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	502.85	697.09	771.36	Process Heat	502.85	678.85	751.17
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1662.01	1791.63	1975.70	Total	1662.01	1752.78	1932.93

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1159.16	1015.66	1116.85	Machine Drive	1159.16	966.02	1062.77
Pump	.00	.00	.00	Pump	.00	.00	.00
Air Displacement	177.59	131.42	138.72	Air Displacement	177.59	115.65	122.07
Compression	14.34	5.84	6.30	Compression	14.34	4.85	5.23
Conveyance	313.80	306.04	338.55	Conveyance	313.80	284.61	314.85
Other	653.42	572.35	633.28	Other	653.42	560.91	620.62
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	502.85	729.94	807.71	Process Heat	502.85	656.95	726.94
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1662.01	1745.60	1924.56	Total	1662.01	1622.97	1789.71

Table 7: High Growth Scenario, Electricity Demand for Process 2

 Industry:WOODPROD Process: Structural/Veneer
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	60	50	51		
Natural	60	48	48	4.1%	5.9%
Econ 1	60	37	38	25.6%	26.8%
Econ 2	60	37	37	26.3%	27.5%
Econ 3	60	37	37	26.8%	28.0%
Econ 4	60	36	36	27.8%	29.0%
Econ 5	60	35	36	29.2%	30.4%
Tech Pot	60	36	36	28.2%	29.3%
Tech Soc	60	34	34	32.1%	33.2%

Table 8: High Growth, Electrical Demand in Auxiliary Units

 Industry:WOODPROD Process: Structural/Veneer
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
Run				% FROM FROZEN		Run				% FROM FROZEN	
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	11.0	9.9	10.7			Frozen	19.91	16.49	17.04		
Natural	11.0	9.0	9.2	9.6%	13.9%	Natural	19.91	16.18	16.69	1.9%	2.1%
Econ 1	11.0	3.7	3.8	63.0%	64.7%	Econ 1	19.91	14.23	14.70	13.7%	13.7%
Econ 2	11.0	3.6	3.7	63.5%	65.2%	Econ 2	19.91	14.07	14.54	14.7%	14.6%
Econ 3	11.0	3.6	3.7	63.9%	65.6%	Econ 3	19.91	13.97	14.44	15.3%	15.3%
Econ 4	11.0	3.5	3.6	64.7%	66.3%	Econ 4	19.91	13.77	14.23	16.5%	16.5%
Econ 5	11.0	3.4	3.5	65.6%	67.2%	Econ 5	19.91	13.52	13.97	18.0%	18.0%
Tech Pot	11.0	3.7	3.8	63.1%	64.8%	Tech Pot	19.91	14.00	14.49	15.1%	15.0%
Tech Soc	11.0	3.3	3.4	66.8%	68.4%	Tech Soc	19.91	13.02	13.47	21.1%	20.9%

Air Displacement						Process drives					
Run				% FROM FROZEN		Run				% FROM FROZEN	
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	4.96	4.49	4.85			Frozen	24.53	19.13	18.73		
Natural	4.96	4.00	3.99	11.0%	17.7%	Natural	24.53	18.86	18.42	1.4%	1.7%
Econ 1	4.96	2.50	2.57	44.4%	46.9%	Econ 1	24.53	16.75	16.40	12.4%	12.4%
Econ 2	4.96	2.45	2.53	45.4%	47.9%	Econ 2	24.53	16.68	16.34	12.8%	12.8%
Econ 3	4.96	2.42	2.49	46.0%	48.5%	Econ 3	24.53	16.63	16.29	13.0%	13.0%
Econ 4	4.96	2.36	2.43	47.4%	49.8%	Econ 4	24.53	16.49	16.14	13.8%	13.8%
Econ 5	4.96	2.29	2.36	49.1%	51.4%	Econ 5	24.53	16.22	15.88	15.2%	15.2%
Tech Pot	4.96	2.49	2.56	44.6%	47.2%	Tech Pot	24.53	15.76	15.47	17.6%	17.4%
Tech Soc	4.96	2.19	2.25	51.2%	53.5%	Tech Soc	24.53	15.45	15.16	19.2%	19.0%

Compression					
Run				% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 4: Low Growth Scenario, Electricity Demand for Process 1

Industry:WOODPROD Process: Saw mills
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	1662	1772	1736		
Natural	1662	1748	1706	1.3%	1.8%
Econ 1	1662	1574	1538	11.1%	11.4%
Econ 2	1662	1558	1522	12.1%	12.4%
Econ 3	1662	1547	1511	12.7%	13.0%
Econ 4	1662	1522	1487	14.1%	14.4%
Econ 5	1662	1489	1455	15.9%	16.2%
Tech Pot	1662	1483	1449	16.3%	16.6%
Tech Soc	1662	1379	1347	22.2%	22.4%

Table 5: Low Growth, Electrical Demand in Auxiliary Units for Process 1

Industry:WOODPROD Process: Saw mills
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

	Auxiliary unit electrical demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	.0	.0	.0		
Natural	.0	.0	.0		
Econ 1	.0	.0	.0		
Econ 2	.0	.0	.0		
Econ 3	.0	.0	.0		
Econ 4	.0	.0	.0		
Econ 5	.0	.0	.0		
Tech Pot	.0	.0	.0		
Tech Soc	.0	.0	.0		

	Tech Soc			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	177.59	201.61	197.62		
Natural	177.59	180.65	162.90	10.4%	17.6%
Econ 1	177.59	112.19	104.90	44.4%	46.9%
Econ 2	177.59	110.15	102.99	45.4%	47.9%
Econ 3	177.59	108.79	101.71	46.0%	48.5%
Econ 4	177.59	106.07	99.18	47.4%	49.8%
Econ 5	177.59	102.69	96.02	49.1%	51.4%
Tech Pot	177.59	111.69	104.43	44.6%	47.2%
Tech Soc	177.59	98.29	91.90	51.2%	53.5%

	Tech Soc			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	14.34	13.41	13.15		
Natural	14.34	9.83	9.39	26.7%	28.6%
Econ 1	14.34	5.42	5.18	59.6%	60.6%
Econ 2	14.34	5.28	5.04	60.7%	61.7%
Econ 3	14.34	5.17	4.94	61.4%	62.4%
Econ 4	14.34	4.96	4.74	63.0%	63.9%
Econ 5	14.34	4.70	4.48	65.0%	65.9%
Tech Pot	14.34	4.96	4.74	63.0%	63.9%
Tech Soc	14.34	4.12	3.93	69.3%	70.1%

	Tech Soc			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	313.80	302.74	296.68		
Natural	313.80	300.87	296.57	.6%	.0%
Econ 1	313.80	266.56	261.22	12.0%	12.0%
Econ 2	313.80	263.69	258.41	12.9%	12.9%
Econ 3	313.80	261.77	256.53	13.5%	13.5%
Econ 4	313.80	257.95	252.79	14.8%	14.8%
Econ 5	313.80	253.20	248.13	16.4%	16.4%
Tech Pot	313.80	260.00	254.79	14.1%	14.1%
Tech Soc	313.80	241.80	236.95	20.1%	20.1%

	Tech Soc			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	653.42	633.54	620.86		
Natural	653.42	636.16	628.81	-.4%	-1.3%
Econ 1	653.42	569.86	558.45	10.1%	10.1%
Econ 2	653.42	567.67	556.31	10.4%	10.4%
Econ 3	653.42	565.95	554.62	10.7%	10.7%
Econ 4	653.42	560.93	549.70	11.5%	11.5%
Econ 5	653.42	551.83	540.78	12.9%	12.9%
Tech Pot	653.42	486.36	476.71	23.2%	23.2%
Tech Soc	653.42	476.64	467.18	24.8%	24.8%

**Table 6: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.**

Industry:WOODPROD Process: Saw mills
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1151.30	1128.31
Pump	.00	.00	.00
Air Displacement	177.59	201.61	197.62
Compression	14.34	13.41	13.15
Conveyance	313.80	302.74	296.68
Other	653.42	633.54	620.86
Electrolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1771.64	1736.38

Natural Run			
Technology	1988	2000	2010
Machine Drive	1159.16	1127.51	1097.67
Pump	.00	.00	.00
Air Displacement	177.59	180.65	162.90
Compression	14.34	9.83	9.39
Conveyance	313.80	300.87	296.57
Other	653.42	636.16	628.81
Electrolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1747.85	1705.74

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	954.04	929.75
Pump	.00	.00	.00
Air Displacement	177.59	112.19	104.90
Compression	14.34	5.42	5.18
Conveyance	313.80	266.56	261.22
Other	653.42	569.86	558.45
Electrolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1574.37	1537.83

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	946.79	922.75
Pump	.00	.00	.00
Air Displacement	177.59	110.15	102.99
Compression	14.34	5.28	5.04
Conveyance	313.80	263.69	258.41
Other	653.42	567.67	556.31
Electrolysis	.00	.00	.00
Process Heat	502.85	611.03	598.95
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1557.83	1521.70

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	941.69	917.81
Pump	.00	.00	.00
Air Displacement	177.59	108.79	101.71
Compression	14.34	5.17	4.94
Conveyance	313.80	261.77	256.53
Other	653.42	565.95	554.62
Electrolysis	.00	.00	.00
Process Heat	502.85	604.83	592.87
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1546.51	1510.68

Table 6: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD Process: Saw mills
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	929.92	906.40
Pump	.00	.00	.00
Air Displacement	177.59	106.07	99.18
Compression	14.34	4.96	4.74
Conveyance	313.80	257.95	252.79
Other	653.42	560.93	549.70
Electolysis	.00	.00	.00
Process Heat	502.85	592.42	580.71
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1522.34	1487.11

Technological Run			
Technology	1988	2000	2010
Machine Drive	1159.16	863.01	840.67
Pump	.00	.00	.00
Air Displacement	177.59	111.69	104.43
Compression	14.34	4.96	4.74
Conveyance	313.80	260.00	254.79
Other	653.42	486.36	476.71
Electolysis	.00	.00	.00
Process Heat	502.85	620.34	608.07
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1483.35	1448.74

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	1159.16	912.41	889.41
Pump	.00	.00	.00
Air Displacement	177.59	102.69	96.02
Compression	14.34	4.70	4.48
Conveyance	313.80	253.20	248.13
Other	653.42	551.83	540.78
Electolysis	.00	.00	.00
Process Heat	502.85	576.91	565.51
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1489.33	1454.91

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	1159.16	820.84	799.96
Pump	.00	.00	.00
Air Displacement	177.59	98.29	91.90
Compression	14.34	4.12	3.93
Conveyance	313.80	241.80	236.95
Other	653.42	476.64	467.18
Electolysis	.00	.00	.00
Process Heat	502.85	558.30	547.26
Light	.00	.00	.00
Other	.00	.00	.00
Total	1662.01	1379.14	1347.23

Table 7: Low Growth Scenario, Electricity Demand for Process 2

Industry:WOODPROD Process: Structural/Veneer
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	60	40	36		
Natural	60	38	34	4.0%	5.9%
Econ 1	60	29	26	25.8%	27.1%
Econ 2	60	29	26	26.5%	27.8%
Econ 3	60	29	26	27.0%	28.3%
Econ 4	60	29	25	28.0%	29.3%
Econ 5	60	28	25	29.4%	30.7%
Tech Pot	60	28	25	28.4%	29.5%
Tech Soc	60	27	24	32.3%	33.4%

Table 8: Low Growth, Electrical Demand in Auxiliary Units

Industry:WOODPROD Process: Structural/Veneer
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Auxiliary unit electrical demand	% FROM FROZEN						% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	11.0	8.0	7.7			Frozen	19.91	13.13	12.00		
Natural	11.0	7.3	6.6	9.6%	13.9%	Natural	19.91	12.89	11.75	1.9%	2.1%
Econ 1	11.0	3.0	2.7	63.0%	64.7%	Econ 1	19.91	11.33	10.35	13.7%	13.7%
Econ 2	11.0	2.9	2.7	63.6%	65.2%	Econ 2	19.91	11.21	10.24	14.6%	14.6%
Econ 3	11.0	2.9	2.6	63.9%	65.6%	Econ 3	19.91	11.13	10.17	15.3%	15.3%
Econ 4	11.0	2.8	2.6	64.7%	66.3%	Econ 4	19.91	10.97	10.02	16.5%	16.5%
Econ 5	11.0	2.8	2.5	65.6%	67.2%	Econ 5	19.91	10.77	9.84	18.0%	18.0%
Tech Pot	11.0	3.0	2.7	63.1%	64.8%	Tech Pot	19.91	11.15	10.21	15.1%	14.9%
Tech Soc	11.0	2.7	2.4	66.8%	68.4%	Tech Soc	19.91	10.37	9.49	21.0%	20.9%

Tech Soc	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	4.96	3.63	3.47		
Natural	4.96	3.25	2.86	10.4%	17.6%
Econ 1	4.96	2.02	1.84	44.4%	46.9%
Econ 2	4.96	1.98	1.81	45.4%	47.9%
Econ 3	4.96	1.96	1.79	46.0%	48.5%
Econ 4	4.96	1.91	1.74	47.4%	49.8%
Econ 5	4.96	1.85	1.69	49.1%	51.4%
Tech Pot	4.96	2.01	1.83	44.6%	47.2%
Tech Soc	4.96	1.77	1.61	51.2%	53.5%

Tech Soc	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	24.53	14.96	12.92		
Natural	24.53	14.76	12.70	1.3%	1.6%
Econ 1	24.53	13.10	11.31	12.4%	12.4%
Econ 2	24.53	13.05	11.27	12.8%	12.8%
Econ 3	24.53	13.01	11.23	13.0%	13.0%
Econ 4	24.53	12.90	11.13	13.8%	13.8%
Econ 5	24.53	12.69	10.95	15.2%	15.2%
Tech Pot	24.53	12.34	10.68	17.5%	17.3%
Tech Soc	24.53	12.09	10.47	19.2%	19.0%

Tech Soc	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 9: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Structural/Veneer
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	60.43	39.74	36.05
Pump	11.02	8.02	7.66
Air Displacement	4.96	3.63	3.47
Compression	.00	.00	.00
Conveyance	19.91	13.13	12.00
Other	24.53	14.96	12.92
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	39.74	36.05

Natural Run			
Technology	1988	2000	2010
Machine Drive	60.43	38.16	33.92
Pump	11.02	7.25	6.60
Air Displacement	4.96	3.25	2.86
Compression	.00	.00	.00
Conveyance	19.91	12.89	11.75
Other	24.53	14.76	12.70
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	38.16	33.92

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	60.43	29.42	26.21
Pump	11.02	2.97	2.71
Air Displacement	4.96	2.02	1.84
Compression	.00	.00	.00
Conveyance	19.91	11.33	10.35
Other	24.53	13.10	11.31
Electolysis	.00	.00	.00
Process Heat	.00	.06	.07
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	29.48	26.28

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	60.43	29.17	25.98
Pump	11.02	2.92	2.66
Air Displacement	4.96	1.98	1.81
Compression	.00	.00	.00
Conveyance	19.91	11.21	10.24
Other	24.53	13.05	11.27
Electolysis	.00	.00	.00
Process Heat	.00	.04	.04
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	29.20	26.03

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	60.43	28.99	25.82
Pump	11.02	2.89	2.64
Air Displacement	4.96	1.96	1.79
Compression	.00	.00	.00
Conveyance	19.91	11.13	10.17
Other	24.53	13.01	11.23
Electolysis	.00	.00	.00
Process Heat	.00	.02	.03
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	29.01	25.85

Table 9: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD Process: Structural/Veneer
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	60.43	28.61	25.48
Pump	11.02	2.83	2.58
Air Displacement	4.96	1.91	1.74
Compression	.00	.00	.00
Conveyance	19.91	10.97	10.02
Other	24.53	12.90	11.13
Electolysis	.00	.00	.00
Process Heat	.00	.01	.01
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	28.61	25.49

Technological Run			
Technology	1988	2000	2010
Machine Drive	60.43	28.46	25.41
Pump	11.02	2.96	2.69
Air Displacement	4.96	2.01	1.83
Compression	.00	.00	.00
Conveyance	19.91	11.15	10.21
Other	24.53	12.34	10.68
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	28.46	25.41

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	60.43	28.06	24.99
Pump	11.02	2.76	2.51
Air Displacement	4.96	1.85	1.69
Compression	.00	.00	.00
Conveyance	19.91	10.77	9.84
Other	24.53	12.69	10.95
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	28.06	24.99

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	60.43	26.90	24.00
Pump	11.02	2.66	2.43
Air Displacement	4.96	1.77	1.61
Compression	.00	.00	.00
Conveyance	19.91	10.37	9.49
Other	24.53	12.09	10.47
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	60.43	26.90	24.00

Table 10: Low Growth Scenario, Electricity Demand for Process 3

Industry:WOODPROD Process: Remanufacturing
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	67	166	209		
Natural	67	163	204	1.5%	2.1%
Econ 1	67	144	178	13.3%	14.8%
Econ 2	67	143	177	13.8%	15.3%
Econ 3	67	142	176	14.2%	15.7%
Econ 4	67	141	174	15.1%	16.6%
Econ 5	67	138	171	16.5%	18.0%
Tech Pot	67	133	166	19.4%	20.5%
Tech Soc	67	129	160	22.3%	23.5%

Table 11: Low Growth, Electrical Demand in Auxiliary Units

Industry:WOODPROD Process: Remanufacturing
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Auxiliary unit electrical demand	% FROM FROZEN						% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.9	1.5	6.4			Frozen	3.64	47.87	62.65		
Natural	.9	1.3	5.5	9.6%	13.9%	Natural	3.64	47.00	61.45	1.8%	1.9%
Econ 1	.9	.5	2.3	63.0%	64.7%	Econ 1	3.64	41.31	54.07	13.7%	13.7%
Econ 2	.9	.5	2.2	63.6%	65.2%	Econ 2	3.64	40.87	53.49	14.6%	14.6%
Econ 3	.9	.5	2.2	63.9%	65.6%	Econ 3	3.64	40.58	53.11	15.2%	15.2%
Econ 4	.9	.5	2.2	64.7%	66.3%	Econ 4	3.64	39.99	52.34	16.5%	16.5%
Econ 5	.9	.5	2.1	65.6%	67.2%	Econ 5	3.64	39.26	51.39	18.0%	18.0%
Tech Pot	.9	.5	2.3	63.1%	64.8%	Tech Pot	3.64	39.25	51.62	18.0%	17.6%
Tech Soc	.9	.5	2.0	66.8%	68.4%	Tech Soc	3.64	36.50	48.01	23.8%	23.4%

Tech Soc	% FROM FROZEN					Tech Soc	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.37	.63	2.72			Frozen	61.86	115.68	137.02		
Natural	.37	.56	2.25	10.4%	17.6%	Natural	61.86	114.29	135.22	1.2%	1.3%
Econ 1	.37	.35	1.45	44.4%	46.9%	Econ 1	61.86	101.36	120.06	12.4%	12.4%
Econ 2	.37	.34	1.42	45.4%	47.9%	Econ 2	61.86	100.99	119.62	12.7%	12.7%
Econ 3	.37	.34	1.40	46.0%	48.5%	Econ 3	61.86	100.70	119.27	13.0%	13.0%
Econ 4	.37	.33	1.37	47.4%	49.8%	Econ 4	61.86	99.83	118.25	13.7%	13.7%
Econ 5	.37	.32	1.32	49.1%	51.4%	Econ 5	61.86	98.24	116.37	15.1%	15.1%
Tech Pot	.37	.35	1.44	44.6%	47.2%	Tech Pot	61.86	93.36	110.63	19.3%	19.3%
Tech Soc	.37	.30	1.27	51.2%	53.5%	Tech Soc	61.86	91.50	108.42	20.9%	20.9%

Tech Soc	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 12: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: WOODPROD Process: Remanufacturing
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	66.74	165.65	208.80
Pump	.87	1.47	6.40
Air Displacement	.37	.63	2.72
Compression	.00	.00	.00
Conveyance	3.64	47.87	62.65
Other	61.86	115.68	137.02
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	165.65	208.80

Natural Run Technology	1988	2000	2010
Machine Drive	66.74	163.18	204.43
Pump	.87	1.33	5.52
Air Displacement	.37	.56	2.25
Compression	.00	.00	.00
Conveyance	3.64	47.00	61.45
Other	61.86	114.29	135.22
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	163.18	204.43

Economic 1 Run Technology	1988	2000	2010
Machine Drive	66.74	143.56	177.83
Pump	.87	.54	2.26
Air Displacement	.37	.35	1.45
Compression	.00	.00	.00
Conveyance	3.64	41.31	54.07
Other	61.86	101.36	120.06
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	143.56	177.83

Economic 2 Run Technology	1988	2000	2010
Machine Drive	66.74	142.74	176.75
Pump	.87	.54	2.23
Air Displacement	.37	.34	1.42
Compression	.00	.00	.00
Conveyance	3.64	40.87	53.49
Other	61.86	100.99	119.62
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	142.74	176.75

Economic 3 Run Technology	1988	2000	2010
Machine Drive	66.74	142.14	175.99
Pump	.87	.53	2.20
Air Displacement	.37	.34	1.40
Compression	.00	.00	.00
Conveyance	3.64	40.58	53.11
Other	61.86	100.70	119.27
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	66.74	142.14	175.99

Table 12: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:WOODPROD Process: Remanufacturing
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	66.74	140.67	174.11	Machine Drive	66.74	138.33	171.18
Pump	.87	.52	2.16	Pump	.87	.51	2.10
Air Displacement	.37	.33	1.37	Air Displacement	.37	.32	1.32
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	3.64	39.99	52.34	Conveyance	3.64	39.26	51.39
Other	61.86	99.83	118.25	Other	61.86	98.24	116.37
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	66.74	140.67	174.11	Total	66.74	138.33	171.18

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	66.74	133.50	165.94	Machine Drive	66.74	128.79	159.72
Pump	.87	.54	2.25	Pump	.87	.49	2.03
Air Displacement	.37	.35	1.44	Air Displacement	.37	.30	1.27
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	3.64	39.25	51.62	Conveyance	3.64	36.50	48.01
Other	61.86	93.36	110.63	Other	61.86	91.50	108.42
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	66.74	133.50	165.94	Total	66.74	128.79	159.72

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PART 4

CHEMICALS

Table 1: High Growth Scenario, Electricity Demand

Industry:CHEMPROD

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1644	2144	2308		
Natural	1644	1992	2113	7.1%	8.5%
Econ 1	1644	1673	1793	21.9%	22.3%
Econ 2	1644	1671	1791	22.0%	22.4%
Econ 3	1644	1670	1789	22.1%	22.5%
Econ 4	1644	1668	1787	22.2%	22.6%
Econ 5	1644	1665	1783	22.3%	22.7%
Tech Pot	1644	1657	1773	22.7%	23.2%
Tech Soc	1644	1648	1764	23.1%	23.6%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry:CHEMPROD

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	129.0	146.2	155.1			Frozen	3.13	4.38	4.77		
Natural	129.0	129.5	126.8	11.4%	18.3%	Natural	3.13	4.48	4.88	-2.3%	-2.5%
Econ 1	129.0	54.0	54.9	63.0%	64.6%	Econ 1	3.13	3.92	4.26	10.6%	10.6%
Econ 2	129.0	53.6	54.4	63.4%	64.9%	Econ 2	3.13	3.91	4.25	10.9%	10.9%
Econ 3	129.0	53.3	54.1	63.6%	65.1%	Econ 3	3.13	3.90	4.24	11.1%	11.1%
Econ 4	129.0	52.6	53.5	64.0%	65.5%	Econ 4	3.13	3.88	4.22	11.4%	11.5%
Econ 5	129.0	51.8	52.6	64.6%	66.1%	Econ 5	3.13	3.86	4.20	11.9%	11.9%
Tech Pot	129.0	49.4	49.4	66.2%	68.1%	Tech Pot	3.13	3.88	4.22	11.3%	11.4%
Tech Soc	129.0	46.9	47.0	67.9%	69.7%	Tech Soc	3.13	3.81	4.14	13.1%	13.1%
Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	5.46	5.75	6.01			Frozen	23.17	20.82	21.19		
Natural	5.46	5.54	5.50	3.7%	8.5%	Natural	23.17	20.88	21.25	-.3%	-.3%
Econ 1	5.46	3.61	3.60	37.2%	40.1%	Econ 1	23.17	18.73	19.06	10.0%	10.0%
Econ 2	5.46	3.60	3.59	37.4%	40.3%	Econ 2	23.17	18.52	18.84	11.1%	11.1%
Econ 3	5.46	3.59	3.58	37.6%	40.5%	Econ 3	23.17	18.34	18.66	11.9%	11.9%
Econ 4	5.46	3.57	3.56	37.9%	40.7%	Econ 4	23.17	18.15	18.47	12.8%	12.8%
Econ 5	5.46	3.55	3.54	38.2%	41.1%	Econ 5	23.17	18.02	18.33	13.5%	13.5%
Tech Pot	5.46	3.59	3.58	37.6%	40.5%	Tech Pot	23.17	18.18	18.50	12.7%	12.7%
Tech Soc	5.46	3.52	3.51	38.8%	41.7%	Tech Soc	23.17	17.82	18.13	14.4%	14.4%
Compression	% FROM FROZEN										
	1988	2000	2010	2000	2010						
Frozen	97.50	131.98	150.75								
Natural	97.50	109.68	121.32	16.9%	19.5%						
Econ 1	97.50	69.90	77.79	47.0%	48.4%						
Econ 2	97.50	69.06	76.86	47.7%	49.0%						
Econ 3	97.50	68.47	76.20	48.1%	49.5%						
Econ 4	97.50	67.27	74.87	49.0%	50.3%						
Econ 5	97.50	65.67	73.09	50.2%	51.5%						
Tech Pot	97.50	58.68	64.21	55.5%	57.4%						
Tech Soc	97.50	54.58	59.71	58.7%	60.4%						

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	258.24	309.10	337.80
Pump	128.97	146.17	155.09
Air Displacement	5.46	5.75	6.01
Compression	97.50	131.98	150.75
Conveyance	3.13	4.38	4.77
Other	23.17	20.82	21.19
Electolysis	1361.70	1800.35	1934.43
Process Heat	.00	.00	.00
Light	12.38	17.04	18.06
Other	12.00	17.14	18.11
Total	1644.31	2143.64	2308.41

Natural Run Technology	1988	2000	2010
Machine Drive	258.24	270.07	279.72
Pump	128.97	129.49	126.76
Air Displacement	5.46	5.54	5.50
Compression	97.50	109.68	121.32
Conveyance	3.13	4.48	4.88
Other	23.17	20.88	21.25
Electolysis	1361.70	1690.33	1801.46
Process Heat	.00	.00	.00
Light	12.38	14.09	13.41
Other	12.00	17.12	18.09
Total	1644.31	1991.61	2112.68

Economic 1 Run Technology	1988	2000	2010
Machine Drive	258.24	150.18	159.61
Pump	128.97	54.01	54.89
Air Displacement	5.46	3.61	3.60
Compression	97.50	69.90	77.79
Conveyance	3.13	3.92	4.26
Other	23.17	18.73	19.06
Electolysis	1361.70	1497.16	1605.66
Process Heat	.00	.00	.00
Light	12.38	8.87	9.39
Other	12.00	17.07	18.08
Total	1644.31	1673.27	1792.75

Economic 2 Run Technology	1988	2000	2010
Machine Drive	258.24	148.64	157.97
Pump	128.97	53.56	54.44
Air Displacement	5.46	3.60	3.59
Compression	97.50	69.06	76.86
Conveyance	3.13	3.91	4.25
Other	23.17	18.52	18.84
Electolysis	1361.70	1496.99	1605.46
Process Heat	.00	.00	.00
Light	12.38	8.73	9.25
Other	12.00	16.94	17.95
Total	1644.31	1671.31	1790.63

Economic 3 Run Technology	1988	2000	2010
Machine Drive	258.24	147.55	156.80
Pump	128.97	53.25	54.12
Air Displacement	5.46	3.59	3.58
Compression	97.50	68.47	76.20
Conveyance	3.13	3.90	4.24
Other	23.17	18.34	18.66
Electolysis	1361.70	1496.98	1605.44
Process Heat	.00	.00	.00
Light	12.38	8.64	9.16
Other	12.00	16.85	17.86
Total	1644.31	1670.02	1789.25

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	258.24	145.50	154.59	Machine Drive	258.24	142.89	151.77
Pump	128.97	52.62	53.47	Pump	128.97	51.79	52.61
Air Displacement	5.46	3.57	3.56	Air Displacement	5.46	3.55	3.54
Compression	97.50	67.27	74.87	Compression	97.50	65.67	73.09
Conveyance	3.13	3.88	4.22	Conveyance	3.13	3.86	4.20
Other	23.17	18.15	18.47	Other	23.17	18.02	18.33
Electolysis	1361.70	1496.98	1605.44	Electolysis	1361.70	1496.98	1605.44
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	12.38	8.47	8.97	Light	12.38	8.25	8.74
Other	12.00	16.68	17.68	Other	12.00	16.47	17.45
Total	1644.31	1667.62	1786.67	Total	1644.31	1664.59	1783.40
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	258.24	133.71	139.94	Machine Drive	258.24	126.62	132.45
Pump	128.97	49.38	49.43	Pump	128.97	46.91	46.96
Air Displacement	5.46	3.59	3.58	Air Displacement	5.46	3.52	3.51
Compression	97.50	58.68	64.21	Compression	97.50	54.58	59.71
Conveyance	3.13	3.88	4.22	Conveyance	3.13	3.81	4.14
Other	23.17	18.18	18.50	Other	23.17	17.82	18.13
Electolysis	1361.70	1496.97	1605.43	Electolysis	1361.70	1496.97	1605.43
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	12.38	8.87	9.39	Light	12.38	7.98	8.45
Other	12.00	17.07	18.08	Other	12.00	16.21	17.18
Total	1644.31	1656.62	1772.85	Total	1644.31	1647.79	1763.51

Table 4: High Growth Scenario, Electricity Demand for Process 1

 Industry:CHEMPROD Process: Electrolysis
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1520	1964	2104		
Natural	1520	1831	1937	6.8%	8.0%
Econ 1	1520	1575	1684	19.8%	20.0%
Econ 2	1520	1574	1684	19.8%	20.0%
Econ 3	1520	1574	1683	19.9%	20.0%
Econ 4	1520	1573	1682	19.9%	20.1%
Econ 5	1520	1572	1681	19.9%	20.1%
Tech Pot	1520	1574	1683	19.8%	20.0%
Tech Soc	1520	1570	1680	20.0%	20.2%

Table 5: High Growth, Electrical Demand in Auxiliary Units for Process 1

 Industry:CHEMPROD Process: Electrolysis
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	103.2	105.0	109.1			Frozen	3.09	4.38	4.77		
Natural	103.2	95.3	90.8	9.3%	16.7%	Natural	3.09	4.45	4.84	-1.5%	-1.5%
Econ 1	103.2	37.7	37.4	64.2%	65.7%	Econ 1	3.09	3.92	4.26	10.6%	10.6%
Econ 2	103.2	37.4	37.1	64.4%	65.9%	Econ 2	3.09	3.91	4.25	10.9%	10.9%
Econ 3	103.2	37.2	36.9	64.6%	66.1%	Econ 3	3.09	3.90	4.24	11.1%	11.1%
Econ 4	103.2	36.8	36.5	65.0%	66.5%	Econ 4	3.09	3.88	4.22	11.4%	11.5%
Econ 5	103.2	36.3	36.1	65.5%	66.9%	Econ 5	3.09	3.86	4.20	11.9%	11.9%
Tech Pot	103.2	37.4	37.2	64.4%	65.9%	Tech Pot	3.09	3.88	4.22	11.3%	11.4%
Tech Soc	103.2	35.6	35.4	66.1%	67.6%	Tech Soc	3.09	3.81	4.14	13.1%	13.1%

Air Displacement						Process drives					
						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	1.50	1.57	1.65			Frozen	22.94	20.74	21.08		
Natural	1.50	1.52	1.52	3.1%	7.9%	Natural	22.94	20.78	21.12	-.2%	-.2%
Econ 1	1.50	.99	.99	37.2%	40.1%	Econ 1	22.94	18.66	18.97	10.0%	10.0%
Econ 2	1.50	.98	.98	37.4%	40.3%	Econ 2	22.94	18.44	18.75	11.1%	11.1%
Econ 3	1.50	.98	.98	37.6%	40.5%	Econ 3	22.94	18.27	18.57	11.9%	11.9%
Econ 4	1.50	.98	.98	37.9%	40.7%	Econ 4	22.94	18.08	18.38	12.8%	12.8%
Econ 5	1.50	.97	.97	38.2%	41.1%	Econ 5	22.94	17.95	18.24	13.5%	13.5%
Tech Pot	1.50	.98	.98	37.6%	40.5%	Tech Pot	22.94	18.11	18.41	12.7%	12.7%
Tech Soc	1.50	.96	.96	38.8%	41.7%	Tech Soc	22.94	17.75	18.04	14.4%	14.4%

Compression						% FROM FROZEN					
Run	1988	2000	2010	2000	2010						
Frozen	28.05	31.54	33.27								
Natural	28.05	28.35	29.17	10.1%	12.3%						
Econ 1	28.05	16.75	17.22	46.9%	48.2%						
Econ 2	28.05	16.56	17.02	47.5%	48.8%						
Econ 3	28.05	16.43	16.89	47.9%	49.2%						
Econ 4	28.05	16.19	16.64	48.7%	50.0%						
Econ 5	28.05	15.89	16.33	49.6%	50.9%						
Tech Pot	28.05	16.61	17.07	47.3%	48.7%						
Tech Soc	28.05	15.45	15.88	51.0%	52.3%						

Table 6: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Electrolysis
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	158.79	163.28	169.83
Pump	103.21	105.05	109.07
Air Displacement	1.50	1.57	1.65
Compression	28.05	31.54	33.27
Conveyance	3.09	4.38	4.77
Other	22.94	20.74	21.08
Electolysis	1361.70	1800.35	1934.43
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1963.63	2104.26

Natural Run Technology	1988	2000	2010
Machine Drive	158.79	150.34	147.48
Pump	103.21	95.25	90.84
Air Displacement	1.50	1.52	1.52
Compression	28.05	28.35	29.17
Conveyance	3.09	4.45	4.84
Other	22.94	20.78	21.12
Electolysis	1361.70	1680.62	1789.23
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1830.97	1936.71

Economic 1 Run Technology	1988	2000	2010
Machine Drive	158.79	77.97	78.87
Pump	103.21	37.65	37.44
Air Displacement	1.50	.99	.99
Compression	28.05	16.75	17.22
Conveyance	3.09	3.92	4.26
Other	22.94	18.66	18.97
Electolysis	1361.70	1496.97	1605.43
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1574.95	1684.30

Economic 2 Run Technology	1988	2000	2010
Machine Drive	158.79	77.25	78.13
Pump	103.21	37.36	37.14
Air Displacement	1.50	.98	.98
Compression	28.05	16.56	17.02
Conveyance	3.09	3.91	4.25
Other	22.94	18.44	18.75
Electolysis	1361.70	1496.98	1605.43
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1574.22	1683.57

Economic 3 Run Technology	1988	2000	2010
Machine Drive	158.79	76.74	77.62
Pump	103.21	37.16	36.94
Air Displacement	1.50	.98	.98
Compression	28.05	16.43	16.89
Conveyance	3.09	3.90	4.24
Other	22.94	18.27	18.57
Electolysis	1361.70	1496.98	1605.43
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1573.71	1683.05

Table 6: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Electrolysis
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	158.79	75.89	76.76	Machine Drive	158.79	74.95	75.81
Pump	103.21	36.76	36.55	Pump	103.21	36.28	36.07
Air Displacement	1.50	.98	.98	Air Displacement	1.50	.97	.97
Compression	28.05	16.19	16.64	Compression	28.05	15.89	16.33
Conveyance	3.09	3.88	4.22	Conveyance	3.09	3.86	4.20
Other	22.94	18.08	18.38	Other	22.94	17.95	18.24
Electrolysis	1361.70	1496.98	1605.44	Electrolysis	1361.70	1496.98	1605.44
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1520.49	1572.86	1682.19	Total	1520.49	1571.93	1681.25

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	158.79	77.01	77.90	Machine Drive	158.79	73.52	74.37
Pump	103.21	37.43	37.21	Pump	103.21	35.56	35.35
Air Displacement	1.50	.98	.98	Air Displacement	1.50	.96	.96
Compression	28.05	16.61	17.07	Compression	28.05	15.45	15.88
Conveyance	3.09	3.88	4.22	Conveyance	3.09	3.81	4.14
Other	22.94	18.11	18.41	Other	22.94	17.75	18.04
Electrolysis	1361.70	1496.97	1605.43	Electrolysis	1361.70	1496.97	1605.43
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	1520.49	1573.99	1683.33	Total	1520.49	1570.49	1679.80

Table 7: High Growth Scenario, Electricity Demand for Process 2

Industry:CHEMPROD Process: Hydrogen Peroxide
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	0	42	52		
Natural	0	34	42	18.0%	19.8%
Econ 1	0	20	24	52.7%	54.2%
Econ 2	0	19	23	53.7%	55.2%
Econ 3	0	19	23	54.3%	55.7%
Econ 4	0	19	22	55.4%	56.8%
Econ 5	0	18	22	57.3%	58.6%
Tech Pot	0	4	5	89.3%	89.7%
Tech Soc	0	4	5	89.9%	90.3%

Table 8: High Growth, Electrical Demand in Auxiliary Units

Industry:CHEMPROD Process: Hydrogen Peroxide
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.0	18.4	22.9			Frozen	.00	-.00	-.00		
Natural	.0	12.4	14.7	32.5%	35.6%	Natural	.00	.04	.05		
Econ 1	.0	7.3	8.6	60.5%	62.3%	Econ 1	.00	.00	.00		
Econ 2	.0	7.2	8.5	60.9%	62.6%	Econ 2	.00	.00	.00		
Econ 3	.0	7.1	8.5	61.2%	63.0%	Econ 3	.00	.00	.00		
Econ 4	.0	7.0	8.3	62.0%	63.7%	Econ 4	.00	.00	.00		
Econ 5	.0	6.7	8.0	63.3%	64.9%	Econ 5	.00	.00	.00		
Tech Pot	.0	2.9	3.4	84.2%	84.9%	Tech Pot	.00	.00	.00		
Tech Soc	.0	2.8	3.3	85.0%	85.7%	Tech Soc	.00	.00	.00		
Air Displacement						Process drives					
Run	% FROM FROZEN					Run	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Frozen	.00	.71	.88			Frozen	.00	.08	.10		
Natural	.00	.65	.78	7.8%	12.4%	Natural	.00	.10	.13	-25.5%	-25.7%
Econ 1	.00	.45	.53	37.3%	40.2%	Econ 1	.00	.08	.09	9.6%	9.6%
Econ 2	.00	.44	.53	37.4%	40.3%	Econ 2	.00	.07	.09	11.0%	11.0%
Econ 3	.00	.44	.53	37.6%	40.5%	Econ 3	.00	.07	.09	11.9%	11.9%
Econ 4	.00	.44	.52	37.9%	40.7%	Econ 4	.00	.07	.09	12.8%	12.8%
Econ 5	.00	.44	.52	38.2%	41.1%	Econ 5	.00	.07	.09	13.5%	13.5%
Tech Pot	.00	.44	.53	37.6%	40.5%	Tech Pot	.00	.07	.09	12.7%	12.7%
Tech Soc	.00	.43	.52	38.8%	41.7%	Tech Soc	.00	.07	.09	14.4%	14.4%
Compression											
Run	% FROM FROZEN										
	1988	2000	2010	2000	2010						
Frozen	.00	22.55	28.10								
Natural	.00	11.31	13.78	49.8%	51.0%						
Econ 1	.00	11.77	14.31	47.8%	49.1%						
Econ 2	.00	11.59	14.10	48.6%	49.8%						
Econ 3	.00	11.44	13.93	49.3%	50.4%						
Econ 4	.00	11.10	13.53	50.8%	51.9%						
Econ 5	.00	10.54	12.88	53.3%	54.2%						
Tech Pot	.00	1.04	1.27	95.4%	95.5%						
Tech Soc	.00	.97	1.18	95.7%	95.8%						

Table 9: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: CHENPROD Process: Hydrogen Peroxide
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	.00	41.70	51.98
Pump	.00	18.36	22.89
Air Displacement	.00	.71	.88
Compression	.00	22.55	28.10
Conveyance	.00	-.00	-.00
Other	.00	.08	.10
Electrolysis	.00	-.00	-.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	41.70	51.98

Natural Run Technology	1988	2000	2010
Machine Drive	.00	24.50	29.48
Pump	.00	12.39	14.75
Air Displacement	.00	.65	.78
Compression	.00	11.31	13.78
Conveyance	.00	.04	.05
Other	.00	.10	.13
Electrolysis	.00	9.71	12.23
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	34.21	41.71

Economic 1 Run Technology	1988	2000	2010
Machine Drive	.00	19.55	23.57
Pump	.00	7.26	8.64
Air Displacement	.00	.45	.53
Compression	.00	11.77	14.31
Conveyance	.00	.00	.00
Other	.00	.08	.09
Electrolysis	.00	.18	.23
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	19.73	23.80

Economic 2 Run Technology	1988	2000	2010
Machine Drive	.00	19.29	23.27
Pump	.00	7.18	8.55
Air Displacement	.00	.44	.53
Compression	.00	11.59	14.10
Conveyance	.00	.00	.00
Other	.00	.07	.09
Electrolysis	.00	.02	.02
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	19.31	23.29

Economic 3 Run Technology	1988	2000	2010
Machine Drive	.00	19.08	23.02
Pump	.00	7.12	8.48
Air Displacement	.00	.44	.53
Compression	.00	11.44	13.93
Conveyance	.00	.00	.00
Other	.00	.07	.09
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	19.08	23.02

Table 9: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Hydrogen Peroxide
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	.00	18.59	22.45	Machine Drive	.00	17.79	21.54
Pump	.00	6.97	8.31	Pump	.00	6.74	8.04
Air Displacement	.00	.44	.52	Air Displacement	.00	.44	.52
Compression	.00	11.10	13.53	Compression	.00	10.54	12.88
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.07	.09	Other	.00	.07	.09
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	.00	18.59	22.45	Total	.00	17.79	21.54
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	.00	4.46	5.33	Machine Drive	.00	4.23	5.06
Pump	.00	2.90	3.45	Pump	.00	2.76	3.28
Air Displacement	.00	.44	.53	Air Displacement	.00	.43	.52
Compression	.00	1.04	1.27	Compression	.00	.97	1.18
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.07	.09	Other	.00	.07	.09
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	.00	4.46	5.33	Total	.00	4.23	5.06

Table 10: High Growth Scenario, Electricity Demand for Process 3

 Industry:CHEMPROD Process: Ammonia/Oxygen
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggr totals (GWh)

	Aggregate Elect Demand			% FROM FROZEN	
	1988	2000	2010	2000	2010
Frozen	99	104	116		
Natural	99	95	103	8.6%	11.4%
Econ 1	99	53	57	49.4%	50.7%
Econ 2	99	52	57	50.0%	51.2%
Econ 3	99	52	56	50.3%	51.6%
Econ 4	99	51	55	51.0%	52.3%
Econ 5	99	50	54	51.8%	53.1%
Tech Pot	99	52	57	49.8%	51.1%
Tech Soc	99	49	53	53.1%	54.3%

Table 11: High Growth, Electrical Demand in Auxiliary Units

 Industry:CHEMPROD Process: Ammonia/Oxygen
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	25.8	22.8	23.1			Run	.04	.00	.00		
Frozen	25.8	21.8	21.2	4.0%	8.5%	Frozen	.04	.00	.00		
Natural	25.8	9.1	8.8	60.0%	61.9%	Natural	.04	.00	.00		
Econ 1	25.8	9.0	8.8	60.3%	62.2%	Econ 1	.04	.00	.00		
Econ 2	25.8	9.0	8.7	60.5%	62.4%	Econ 2	.04	.00	.00		
Econ 3	25.8	8.9	8.6	61.0%	62.8%	Econ 3	.04	.00	.00		
Econ 4	25.8	8.8	8.5	61.5%	63.3%	Econ 4	.04	.00	.00		
Econ 5	25.8	9.0	8.8	60.3%	62.1%	Econ 5	.04	.00	.00		
Tech Pot	25.8	8.6	8.3	62.2%	64.0%	Tech Pot	.04	.00	.00		
Tech Soc						Tech Soc	.04	.00	.00		

Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	3.96	3.47	3.48			Run	.23	.00	.00		
Frozen	3.96	3.36	3.21	3.1%	7.9%	Frozen	.23	.00	.00		
Natural	3.96	2.18	2.08	37.2%	40.1%	Natural	.23	.00	.00		
Econ 1	3.96	2.17	2.08	37.4%	40.3%	Econ 1	.23	.00	.00		
Econ 2	3.96	2.16	2.07	37.6%	40.5%	Econ 2	.23	.00	.00		
Econ 3	3.96	2.15	2.06	37.9%	40.7%	Econ 3	.23	.00	.00		
Econ 4	3.96	2.14	2.05	38.2%	41.1%	Econ 4	.23	.00	.00		
Econ 5	3.96	2.16	2.07	37.6%	40.5%	Econ 5	.23	.00	.00		
Tech Pot	3.96	2.12	2.03	38.8%	41.7%	Tech Pot	.23	.00	.00		
Tech Soc						Tech Soc	.23	.00	.00		

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run	69.46	77.90	89.38		
Frozen	69.46	70.02	78.37	10.1%	12.3%
Natural	69.46	41.38	46.26	46.9%	48.2%
Econ 1	69.46	40.91	45.73	47.5%	48.8%
Econ 2	69.46	40.59	45.38	47.9%	49.2%
Econ 3	69.46	39.99	44.70	48.7%	50.0%
Econ 4	69.46	39.24	43.87	49.6%	50.9%
Econ 5	69.46	41.03	45.87	47.3%	48.7%
Tech Pot	69.46	38.16	42.66	51.0%	52.3%
Tech Soc					

Table 12: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Ammonia/Oxygen
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run		1988	2000	2010
Technology				
Machine Drive		99.45	104.13	116.00
Pump		25.76	22.76	23.13
Air Displacement		3.96	3.47	3.48
Compression		69.46	77.90	89.38
Conveyance		.04	.00	.00
Other		.23	.00	.00
Electolysis		.00	.00	.00
Process Heat		.00	.00	.00
Light		.00	.00	.00
Other		.00	.00	.00
Total		99.45	104.13	116.00

Natural Run		1988	2000	2010
Technology				
Machine Drive		99.45	95.22	102.76
Pump		25.76	21.84	21.18
Air Displacement		3.96	3.36	3.21
Compression		69.46	70.02	78.37
Conveyance		.04	.00	.00
Other		.23	.00	.00
Electolysis		.00	.00	.00
Process Heat		.00	.00	.00
Light		.00	.00	.00
Other		.00	.00	.00
Total		99.45	95.22	102.76

Economic 1 Run		1988	2000	2010
Technology				
Machine Drive		99.45	52.66	57.17
Pump		25.76	9.10	8.82
Air Displacement		3.96	2.18	2.08
Compression		69.46	41.38	46.26
Conveyance		.04	.00	.00
Other		.23	.00	.00
Electolysis		.00	.00	.00
Process Heat		.00	.00	.00
Light		.00	.00	.00
Other		.00	.00	.00
Total		99.45	52.66	57.17

Economic 2 Run		1988	2000	2010
Technology				
Machine Drive		99.45	52.10	56.56
Pump		25.76	9.03	8.75
Air Displacement		3.96	2.17	2.08
Compression		69.46	40.91	45.73
Conveyance		.04	.00	.00
Other		.23	.00	.00
Electolysis		.00	.00	.00
Process Heat		.00	.00	.00
Light		.00	.00	.00
Other		.00	.00	.00
Total		99.45	52.10	56.56

Economic 3 Run		1988	2000	2010
Technology				
Machine Drive		99.45	51.74	56.16
Pump		25.76	8.98	8.71
Air Displacement		3.96	2.16	2.07
Compression		69.46	40.59	45.38
Conveyance		.04	.00	.00
Other		.23	.00	.00
Electolysis		.00	.00	.00
Process Heat		.00	.00	.00
Light		.00	.00	.00
Other		.00	.00	.00
Total		99.45	51.74	56.16

Table 12: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Ammonia/Oxygen
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	99.45	51.02	55.38	Machine Drive	99.45	50.15	54.43
Pump	25.76	8.88	8.61	Pump	25.76	8.77	8.50
Air Displacement	3.96	2.15	2.06	Air Displacement	3.96	2.14	2.05
Compression	69.46	39.99	44.70	Compression	69.46	39.24	43.87
Conveyance	.04	.00	.00	Conveyance	.04	.00	.00
Other	.23	.00	.00	Other	.23	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	99.45	51.02	55.38	Total	99.45	50.15	54.43
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	99.45	52.24	56.71	Machine Drive	99.45	48.87	53.02
Pump	25.76	9.05	8.77	Pump	25.76	8.59	8.33
Air Displacement	3.96	2.16	2.07	Air Displacement	3.96	2.12	2.03
Compression	69.46	41.03	45.87	Compression	69.46	38.16	42.66
Conveyance	.04	.00	.00	Conveyance	.04	.00	.00
Other	.23	.00	.00	Other	.23	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	99.45	52.24	56.71	Total	99.45	48.87	53.02

Table 1: Low Growth Scenario, Electricity Demand

Industry:CHEMPROD

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1644	1950	2020		
Natural	1644	1813	1836	7.1%	9.1%
Econ 1	1644	1505	1551	22.8%	23.2%
Econ 2	1644	1503	1549	22.9%	23.3%
Econ 3	1644	1502	1548	23.0%	23.4%
Econ 4	1644	1499	1546	23.1%	23.5%
Econ 5	1644	1497	1543	23.3%	23.6%
Tech Pot	1644	1490	1536	23.6%	23.9%
Tech Soc	1644	1481	1528	24.0%	24.4%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

Industry:CHEMPROD

Cons. Pot. Rev. Low Output

Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	129.0	133.0	130.1			Frozen	3.13	3.93	4.18		
Natural	129.0	118.5	107.6	10.9%	17.3%	Natural	3.13	4.02	4.28	-2.3%	-2.3%
Econ 1	129.0	49.2	46.2	63.0%	64.5%	Econ 1	3.13	3.53	3.75	10.3%	10.3%
Econ 2	129.0	48.8	45.8	63.3%	64.8%	Econ 2	3.13	3.51	3.73	10.6%	10.6%
Econ 3	129.0	48.5	45.6	63.5%	65.0%	Econ 3	3.13	3.50	3.73	10.8%	10.8%
Econ 4	129.0	47.9	45.0	64.0%	65.4%	Econ 4	3.13	3.49	3.71	11.2%	11.2%
Econ 5	129.0	47.1	44.3	64.6%	66.0%	Econ 5	3.13	3.47	3.69	11.7%	11.7%
Tech Pot	129.0	45.1	42.3	66.1%	67.5%	Tech Pot	3.13	3.48	3.70	11.4%	11.4%
Tech Soc	129.0	42.8	40.2	67.8%	69.1%	Tech Soc	3.13	3.41	3.63	13.1%	13.1%
Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	5.46	5.52	5.48			Frozen	23.17	18.51	17.11		
Natural	5.46	5.31	5.03	3.7%	8.4%	Natural	23.17	18.56	17.16	-.3%	-.3%
Econ 1	5.46	3.47	3.29	37.2%	40.1%	Econ 1	23.17	16.65	15.39	10.0%	10.0%
Econ 2	5.46	3.46	3.28	37.4%	40.3%	Econ 2	23.17	16.48	15.23	11.0%	11.0%
Econ 3	5.46	3.45	3.27	37.5%	40.4%	Econ 3	23.17	16.35	15.11	11.7%	11.7%
Econ 4	5.46	3.43	3.26	37.8%	40.7%	Econ 4	23.17	16.18	14.96	12.6%	12.6%
Econ 5	5.46	3.41	3.24	38.1%	41.0%	Econ 5	23.17	16.06	14.84	13.3%	13.3%
Tech Pot	128.97	3.44	3.27	37.6%	40.5%	Tech Pot	23.17	16.16	14.94	12.7%	12.7%
Tech Soc	5.46	3.37	3.20	38.8%	41.6%	Tech Soc	23.17	15.84	14.64	14.4%	14.4%
Compression											
% FROM FROZEN											
Run	1988	2000	2010	2000	2010						
Frozen	97.50	126.43	137.56								
Natural	97.50	105.55	112.74	16.5%	18.0%						
Econ 1	97.50	67.02	71.10	47.0%	48.3%						
Econ 2	97.50	66.18	70.23	47.7%	48.9%						
Econ 3	97.50	65.58	69.60	48.1%	49.4%						
Econ 4	97.50	64.36	68.34	49.1%	50.3%						
Econ 5	97.50	62.75	66.68	50.4%	51.5%						
Tech Pot	97.50	56.80	61.08	55.1%	55.6%						
Tech Soc	97.50	52.82	56.81	58.2%	58.7%						

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Frozen Efficiency Run

Technology	1988	2000	2010
Machine Drive	258.24	287.40	294.45
Pump	128.97	133.01	130.12
Air Displacement	5.46	5.52	5.48
Compression	97.50	126.43	137.56
Conveyance	3.13	3.93	4.18
Other	23.17	18.51	17.11
Electolysis	1361.70	1611.80	1672.60
Process Heat	.00	.00	.00
Light	12.38	16.37	16.85
Other	12.00	34.67	35.62
Total	1644.31	1950.24	2019.51

Natural Efficiency Run

Technology	1988	2000	2010
Machine Drive	258.24	251.95	246.80
Pump	128.97	118.50	107.60
Air Displacement	5.46	5.31	5.03
Compression	97.50	105.55	112.74
Conveyance	3.13	4.02	4.28
Other	23.17	18.56	17.16
Electolysis	1361.70	1512.42	1540.64
Process Heat	.00	.00	.00
Light	12.38	13.60	12.53
Other	12.00	34.64	35.60
Total	1644.31	1812.61	1835.57

Economic 1 Efficiency Run

Technology	1988	2000	2010
Machine Drive	258.24	139.88	139.75
Pump	128.97	49.22	46.22
Air Displacement	5.46	3.47	3.29
Compression	97.50	67.02	71.10
Conveyance	3.13	3.53	3.75
Other	23.17	16.65	15.39
Electolysis	1361.70	1340.58	1386.03
Process Heat	.00	.00	.00
Light	12.38	8.52	8.76
Other	12.00	16.39	16.87
Total	1644.31	1505.37	1551.42

Economic 2 Efficiency Run

Technology	1988	2000	2010
Machine Drive	258.24	138.44	138.31
Pump	128.97	48.81	45.84
Air Displacement	5.46	3.46	3.28
Compression	97.50	66.18	70.23
Conveyance	3.13	3.51	3.73
Other	23.17	16.48	15.23
Electolysis	1361.70	1340.04	1385.48
Process Heat	.00	.00	.00
Light	12.38	8.39	8.63
Other	12.00	16.27	16.74
Total	1644.31	1503.14	1549.17

Economic 3 Efficiency Run

Technology	1988	2000	2010
Machine Drive	258.24	137.39	137.27
Pump	128.97	48.51	45.56
Air Displacement	5.46	3.45	3.27
Compression	97.50	65.58	69.60
Conveyance	3.13	3.50	3.73
Other	23.17	16.35	15.11
Electolysis	1361.70	1339.96	1385.40
Process Heat	.00	.00	.00
Light	12.38	8.30	8.54
Other	12.00	16.19	16.66
Total	1644.31	1501.84	1547.87

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Efficiency Run			
Technology	1988	2000	2010
Machine Drive	258.24	135.38	135.26
Pump	128.97	47.91	45.00
Air Displacement	5.46	3.43	3.26
Compression	97.50	64.36	68.34
Conveyance	3.13	3.49	3.71
Other	23.17	16.18	14.96
Electolysis	1361.70	1339.95	1385.40
Process Heat	.00	.00	.00
Light	12.38	8.13	8.37
Other	12.00	16.03	16.49
Total	1644.31	1499.49	1545.52

Economic 5 Efficiency Run			
Technology	1988	2000	2010
Machine Drive	258.24	132.81	132.72
Pump	128.97	47.12	44.27
Air Displacement	5.46	3.41	3.24
Compression	97.50	62.75	66.68
Conveyance	3.13	3.47	3.69
Other	23.17	16.06	14.84
Electolysis	1361.70	1339.97	1385.42
Process Heat	.00	.00	.00
Light	12.38	7.92	8.15
Other	12.00	15.82	16.28
Total	1644.31	1496.52	1542.56

Technical Efficiency Run			
Technology	1988	2000	2010
Machine Drive	258.24	124.94	125.25
Pump	128.97	45.06	42.26
Air Displacement	5.46	3.44	3.27
Compression	97.50	56.80	61.08
Conveyance	3.13	3.48	3.70
Other	23.17	16.16	14.94
Electolysis	1361.70	1339.93	1385.38
Process Heat	.00	.00	.00
Light	12.38	8.52	8.76
Other	12.00	16.39	16.87
Total	1644.31	1489.78	1536.26

Technical Efficiency Run			
Technology	1988	2000	2010
Machine Drive	258.24	118.25	118.43
Pump	128.97	42.80	40.15
Air Displacement	5.46	3.37	3.20
Compression	97.50	52.82	56.81
Conveyance	3.13	3.41	3.63
Other	23.17	15.84	14.64
Electolysis	1361.70	1339.93	1385.38
Process Heat	.00	.00	.00
Light	12.38	7.67	7.89
Other	12.00	15.57	16.03
Total	1644.31	1481.42	1527.71

Table 4: Low Growth Scenario, Electricity Demand for Process 1

Industry:CHEMPROD Process: Electrolysis
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1520	1757	1814		
Natural	1520	1638	1655	6.8%	8.8%
Econ 1	1520	1410	1451	19.8%	20.0%
Econ 2	1520	1409	1451	19.8%	20.0%
Econ 3	1520	1409	1450	19.9%	20.1%
Econ 4	1520	1408	1449	19.9%	20.1%
Econ 5	1520	1407	1449	19.9%	20.1%
Tech Pot	1520	1409	1450	19.8%	20.0%
Tech Soc	1520	1405	1447	20.0%	20.2%

Table 5: Low Growth, Electrical Demand in Auxiliary Units for Process 1

Industry:CHEMPROD Process: Electrolysis
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	103.2	93.6	90.5			Frozen	3.09	3.93	4.18		
Natural	103.2	85.4	75.9	8.8%	16.2%	Natural	3.09	3.99	4.24	-1.5%	-1.5%
Econ 1	103.2	33.6	31.3	64.1%	65.5%	Econ 1	3.09	3.52	3.75	10.3%	10.3%
Econ 2	103.2	33.4	31.0	64.4%	65.7%	Econ 2	3.09	3.51	3.73	10.6%	10.6%
Econ 3	103.2	33.2	30.8	64.6%	65.9%	Econ 3	3.09	3.50	3.73	10.8%	10.8%
Econ 4	103.2	32.8	30.5	64.9%	66.3%	Econ 4	3.09	3.49	3.71	11.2%	11.2%
Econ 5	103.2	32.4	30.1	65.4%	66.7%	Econ 5	3.09	3.47	3.69	11.7%	11.7%
Tech Pot	103.2	33.4	31.0	64.3%	65.7%	Tech Pot	3.09	3.48	3.70	11.4%	11.4%
Tech Soc	103.2	31.7	29.5	66.1%	67.4%	Tech Soc	3.09	3.41	3.63	13.1%	13.1%

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	1.50	1.40	1.38			Frozen	22.94	18.44	17.03		
Natural	1.50	1.36	1.27	3.1%	7.9%	Natural	22.94	18.47	17.06	-.2%	-.2%
Econ 1	1.50	.88	.83	37.1%	40.0%	Econ 1	22.94	16.58	15.32	10.0%	10.0%
Econ 2	1.50	.88	.82	37.4%	40.2%	Econ 2	22.94	16.41	15.17	11.0%	11.0%
Econ 3	1.50	.88	.82	37.5%	40.4%	Econ 3	22.94	16.28	15.04	11.7%	11.7%
Econ 4	1.50	.87	.82	37.8%	40.7%	Econ 4	22.94	16.12	14.89	12.6%	12.6%
Econ 5	1.50	.87	.81	38.1%	41.0%	Econ 5	22.94	15.99	14.77	13.3%	13.3%
Tech Pot	1.50	.88	.82	37.6%	40.5%	Tech Pot	22.94	16.10	14.87	12.7%	12.7%
Tech Soc	1.50	.86	.80	38.8%	41.6%	Tech Soc	22.94	15.77	14.57	14.4%	14.4%

Compression					
% FROM FROZEN					
Run	1988	2000	2010	2000	2010
Frozen	28.05	28.17	28.15		
Natural	28.05	25.32	24.69	10.1%	12.3%
Econ 1	28.05	15.02	14.63	46.7%	48.0%
Econ 2	28.05	14.85	14.46	47.3%	48.6%
Econ 3	28.05	14.73	14.35	47.7%	49.0%
Econ 4	28.05	14.51	14.13	48.5%	49.8%
Econ 5	28.05	14.24	13.86	49.5%	50.8%
Tech Pot	28.05	14.84	14.45	47.3%	48.7%
Tech Soc	28.05	13.80	13.44	51.0%	52.3%

Table 6: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Electrolysis
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen efficiency

Technology	1988	2000	2010
Machine Drive	158.79	145.57	141.28
Pump	103.21	93.63	90.54
Air Displacement	1.50	1.40	1.38
Compression	28.05	28.17	28.15
Conveyance	3.09	3.93	4.18
Other	22.94	18.44	17.03
Electrolysis	1361.70	1611.80	1672.60
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1757.37	1813.88

Natural efficiency

Technology	1988	2000	2010
Machine Drive	158.79	134.57	123.12
Pump	103.21	85.43	75.86
Air Displacement	1.50	1.36	1.27
Compression	28.05	25.32	24.69
Conveyance	3.09	3.99	4.24
Other	22.94	18.47	17.06
Electrolysis	1361.70	1503.63	1531.89
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1638.20	1655.01

Economic 1

Technology	1988	2000	2010
Machine Drive	158.79	69.64	65.79
Pump	103.21	33.62	31.26
Air Displacement	1.50	.88	.83
Compression	28.05	15.02	14.63
Conveyance	3.09	3.52	3.75
Other	22.94	16.58	15.32
Electrolysis	1361.70	1339.94	1385.38
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1409.58	1451.17

Economic 2

Technology	1988	2000	2010
Machine Drive	158.79	69.01	65.20
Pump	103.21	33.36	31.02
Air Displacement	1.50	.88	.82
Compression	28.05	14.85	14.46
Conveyance	3.09	3.51	3.73
Other	22.94	16.41	15.17
Electrolysis	1361.70	1339.94	1385.38
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1408.95	1450.58

Economic 3

Technology	1988	2000	2010
Machine Drive	158.79	68.58	64.79
Pump	103.21	33.18	30.85
Air Displacement	1.50	.88	.82
Compression	28.05	14.73	14.35
Conveyance	3.09	3.50	3.73
Other	22.94	16.28	15.04
Electrolysis	1361.70	1339.94	1385.39
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1408.52	1450.17

Table 6: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Electrolysis
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4			
Technology	1988	2000	2010
Machine Drive	158.79	67.82	64.07
Pump	103.21	32.83	30.52
Air Displacement	1.50	.87	.82
Compression	28.05	14.51	14.13
Conveyance	3.09	3.49	3.71
Other	22.94	16.12	14.89
Electolysis	1361.70	1339.95	1385.40
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1407.77	1449.47

Economic 5			
Technology	1988	2000	2010
Machine Drive	158.79	66.96	63.27
Pump	103.21	32.40	30.12
Air Displacement	1.50	.87	.81
Compression	28.05	14.24	13.86
Conveyance	3.09	3.47	3.69
Other	22.94	15.99	14.77
Electolysis	1361.70	1339.97	1385.42
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1406.93	1448.68

Natural			
Technology	1988	2000	2010
Machine Drive	158.79	68.67	64.88
Pump	103.21	33.38	31.04
Air Displacement	1.50	.88	.82
Compression	28.05	14.84	14.45
Conveyance	3.09	3.48	3.70
Other	22.94	16.10	14.87
Electolysis	1361.70	1339.93	1385.38
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1408.60	1450.26

Technological Efficiency			
Technology	1988	2000	2010
Machine Drive	158.79	65.56	61.93
Pump	103.21	31.71	29.49
Air Displacement	1.50	.86	.80
Compression	28.05	13.80	13.44
Conveyance	3.09	3.41	3.63
Other	22.94	15.77	14.57
Electolysis	1361.70	1339.93	1385.38
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	1520.49	1405.49	1447.31

Table 7: Low Growth Scenario, Electricity Demand for Process 2

Industry:CHEMPROD Process: Hydrogen Peroxide
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	0	38	38		
Natural	0	31	30	18.0%	20.1%
Econ 1	0	18	17	52.1%	53.6%
Econ 2	0	17	17	54.2%	55.7%
Econ 3	0	17	16	55.1%	56.5%
Econ 4	0	16	16	56.5%	57.9%
Econ 5	0	16	15	58.8%	59.9%
Tech Pot	0	4	4	89.3%	89.7%
Tech Soc	0	4	4	89.9%	90.3%

Table 8: Low Growth, Electrical Demand in Auxiliary Units

Industry:CHEMPROD Process: Hydrogen Peroxide
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run						Run					
Frozen	.0	16.6	16.5			Frozen	.00	.00	.00		
Natural	.0	11.2	10.7	32.5%	35.6%	Natural	.00	.03	.03		
Econ 1	.0	6.5	6.2	61.0%	62.7%	Econ 1	.00	.00	.00		
Econ 2	.0	6.4	6.1	61.4%	63.1%	Econ 2	.00	.00	.00		
Econ 3	.0	6.3	6.0	61.8%	63.5%	Econ 3	.00	.00	.00		
Econ 4	.0	6.2	5.9	62.8%	64.4%	Econ 4	.00	.00	.00		
Econ 5	.0	5.9	5.7	64.3%	65.8%	Econ 5	.00	.00	.00		
Tech Pot	.0	2.6	2.5	84.2%	84.9%	Tech Pot	.00	.00	.00		
Tech Soc	.0	2.5	2.4	85.0%	85.7%	Tech Soc	.00	.00	.00		
Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run						Run					
Frozen	.00	.64	.64			Frozen	.00	.08	.08		
Natural	.00	.59	.56	7.8%	12.3%	Natural	.00	.09	.09	-25.5%	-25.4%
Econ 1	.00	.40	.38	37.3%	40.2%	Econ 1	.00	.07	.07	8.3%	8.3%
Econ 2	.00	.40	.38	37.4%	40.3%	Econ 2	.00	.07	.07	10.7%	10.7%
Econ 3	.00	.40	.38	37.5%	40.4%	Econ 3	.00	.07	.07	11.6%	11.6%
Econ 4	.00	.40	.38	37.8%	40.7%	Econ 4	.00	.07	.07	12.6%	12.6%
Econ 5	.00	.40	.38	38.1%	41.0%	Econ 5	.00	.07	.07	13.3%	13.3%
Tech Pot	.00	.40	.38	37.6%	40.5%	Tech Pot	.00	.07	.07	12.7%	12.7%
Tech Soc	.00	.39	.37	38.8%	41.6%	Tech Soc	.00	.06	.06	14.4%	14.4%

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run					
Frozen	.00	20.38	20.32		
Natural	.00	10.23	9.94	49.8%	51.1%
Econ 1	.00	10.45	10.17	48.7%	49.9%
Econ 2	.00	10.28	10.01	49.6%	50.7%
Econ 3	.00	10.11	9.85	50.4%	51.5%
Econ 4	.00	9.74	9.50	52.2%	53.2%
Econ 5	.00	9.16	8.95	55.1%	55.9%
Tech Pot	.00	.94	.91	95.4%	95.5%
Tech Soc	.00	.88	.85	95.7%	95.8%

Table 9: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Hydrogen Peroxide
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen efficiency

Technology	1988	2000	2010
Machine Drive	.00	37.70	37.58
Pump	.00	16.60	16.55
Air Displacement	.00	.64	.64
Compression	.00	20.38	20.32
Conveyance	.00	.00	.00
Other	.00	.08	.08
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	37.70	37.58

Natural efficiency

Technology	1988	2000	2010
Machine Drive	.00	22.15	21.28
Pump	.00	11.20	10.65
Air Displacement	.00	.59	.56
Compression	.00	10.23	9.94
Conveyance	.00	.03	.03
Other	.00	.09	.09
Electolysis	.00	8.78	8.75
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	30.93	30.04

Economic 1

Technology	1988	2000	2010
Machine Drive	.00	17.40	16.79
Pump	.00	6.47	6.16
Air Displacement	.00	.40	.38
Compression	.00	10.45	10.17
Conveyance	.00	.00	.00
Other	.00	.07	.07
Electolysis	.00	.65	.65
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	18.05	17.44

Economic 2

Technology	1988	2000	2010
Machine Drive	.00	17.15	16.56
Pump	.00	6.40	6.10
Air Displacement	.00	.40	.38
Compression	.00	10.28	10.01
Conveyance	.00	.00	.00
Other	.00	.07	.07
Electolysis	.00	.10	.10
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	17.25	16.66

Economic 3

Technology	1988	2000	2010
Machine Drive	.00	16.92	16.34
Pump	.00	6.34	6.04
Air Displacement	.00	.40	.38
Compression	.00	10.11	9.85
Conveyance	.00	.00	.00
Other	.00	.07	.07
Electolysis	.00	.02	.02
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	.00	16.93	16.35

Table 9: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Hydrogen Peroxide
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4				Economic 5			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	.00	16.39	15.84	Machine Drive	.00	15.55	15.06
Pump	.00	6.18	5.89	Pump	.00	5.93	5.66
Air Displacement	.00	.40	.38	Air Displacement	.00	.40	.38
Compression	.00	9.74	9.50	Compression	.00	9.16	8.95
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.07	.07	Other	.00	.07	.07
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	.00	16.39	15.84	Total	.00	15.55	15.06
Natural				Technological Efficiency			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	.00	4.03	3.85	Machine Drive	.00	3.82	3.66
Pump	.00	2.62	2.49	Pump	.00	2.49	2.37
Air Displacement	.00	.40	.38	Air Displacement	.00	.39	.37
Compression	.00	.94	.91	Compression	.00	.88	.85
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.07	.07	Other	.00	.06	.06
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	.00	4.03	3.85	Total	.00	3.82	3.66

Table 10: Low Growth Scenario, Electricity Demand for Process 3

Industry:CHEMPROD Process: Ammonia/Oxygen
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	99	104	116		
Natural	99	95	102	8.6%	11.4%
Econ 1	99	53	57	49.3%	50.5%
Econ 2	99	52	57	49.8%	51.1%
Econ 3	99	52	56	50.2%	51.4%
Econ 4	99	51	55	50.9%	52.1%
Econ 5	99	50	54	51.7%	52.9%
Tech Pot	99	52	57	49.8%	51.1%
Tech Soc	99	49	53	53.1%	54.3%

Table 11: Low Growth, Electrical Demand in Auxiliary Units

Industry:CHEMPROD Process: Ammonia/Oxygen
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	25.8	22.8	23.0			Run	.04	.00	.00		
Frozen	25.8	21.9	21.1	4.0%	8.5%	Frozen	.04	.00	.00		
Natural	25.8	9.1	8.8	60.0%	61.8%	Natural	.04	.00	.00		
Econ 1	25.8	9.0	8.7	60.3%	62.1%	Econ 1	.04	.00	.00		
Econ 2	25.8	9.0	8.7	60.5%	62.3%	Econ 2	.04	.00	.00		
Econ 3	25.8	8.9	8.6	60.9%	62.7%	Econ 3	.04	.00	.00		
Econ 4	25.8	8.8	8.5	61.4%	63.2%	Econ 4	.04	.00	.00		
Econ 5	25.8	9.1	8.7	60.3%	62.1%	Econ 5	.04	.00	.00		
Tech Pot	25.8	8.6	8.3	62.2%	64.0%	Tech Pot	.04	.00	.00		
Tech Soc						Tech Soc	.04	.00	.00		

Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	3.96	3.47	3.47			Run	.23	.00	.00		
Frozen	3.96	3.36	3.20	3.1%	7.9%	Frozen	.23	.00	.00		
Natural	3.96	2.18	2.08	37.1%	40.0%	Natural	.23	.00	.00		
Econ 1	3.96	2.17	2.07	37.4%	40.2%	Econ 1	.23	.00	.00		
Econ 2	3.96	2.17	2.07	37.5%	40.4%	Econ 2	.23	.00	.00		
Econ 3	3.96	2.16	2.06	37.8%	40.7%	Econ 3	.23	.00	.00		
Econ 4	3.96	2.15	2.05	38.1%	41.0%	Econ 4	.23	.00	.00		
Econ 5	3.96	2.17	2.06	37.6%	40.5%	Econ 5	.23	.00	.00		
Tech Pot	3.96	2.12	2.02	38.8%	41.6%	Tech Pot	.23	.00	.00		
Tech Soc						Tech Soc	.23	.00	.00		

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run	69.46	77.88	89.08		
Frozen	69.46	70.00	78.11	10.1%	12.3%
Natural	69.46	41.54	46.30	46.7%	48.0%
Econ 1	69.46	41.05	45.76	47.3%	48.6%
Econ 2	69.46	40.73	45.40	47.7%	49.0%
Econ 3	69.46	40.11	44.71	48.5%	49.8%
Econ 4	69.46	39.36	43.87	49.5%	50.8%
Econ 5	69.46	41.02	45.72	47.3%	48.7%
Tech Pot	69.46	38.15	42.52	51.0%	52.3%
Tech Soc					

Table 12: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Ammonia/Oxygen
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen efficiency Technology	1988	2000	2010
Machine Drive	99.45	104.13	115.59
Pump	25.76	22.78	23.04
Air Displacement	3.96	3.47	3.47
Compression	69.46	77.88	89.08
Conveyance	.04	.00	.00
Other	.23	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	99.45	104.13	115.59

Natural efficiency

Technology	1988	2000	2010
Machine Drive	99.45	95.23	102.39
Pump	25.76	21.86	21.09
Air Displacement	3.96	3.36	3.20
Compression	69.46	70.00	78.11
Conveyance	.04	.00	.00
Other	.23	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	99.45	95.23	102.39

Economic 1

Technology	1988	2000	2010
Machine Drive	99.45	52.84	57.17
Pump	25.76	9.12	8.80
Air Displacement	3.96	2.18	2.08
Compression	69.46	41.54	46.30
Conveyance	.04	.00	.00
Other	.23	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	99.45	52.84	57.17

Economic 2

Technology	1988	2000	2010
Machine Drive	99.45	52.28	56.56
Pump	25.76	9.05	8.73
Air Displacement	3.96	2.17	2.07
Compression	69.46	41.05	45.76
Conveyance	.04	.00	.00
Other	.23	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	99.45	52.28	56.56

Economic 3

Technology	1988	2000	2010
Machine Drive	99.45	51.90	56.14
Pump	25.76	9.00	8.68
Air Displacement	3.96	2.17	2.07
Compression	69.46	40.73	45.40
Conveyance	.04	.00	.00
Other	.23	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	.00	.00	.00
Other	.00	.00	.00
Total	99.45	51.90	56.14

Table 12: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:CHEMPROD Process: Ammonia/Oxygen
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4				Economic 5			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	99.45	51.18	55.35	Machine Drive	99.45	50.29	54.39
Pump	25.76	8.90	8.59	Pump	25.76	8.79	8.48
Air Displacement	3.96	2.16	2.06	Air Displacement	3.96	2.15	2.05
Compression	69.46	40.11	44.71	Compression	69.46	39.36	43.87
Conveyance	.04	.00	.00	Conveyance	.04	.00	.00
Other	.23	.00	.00	Other	.23	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	99.45	51.18	55.35	Total	99.45	50.29	54.39
Natural				Technological Efficiency			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	99.45	52.24	56.52	Machine Drive	99.45	48.87	52.84
Pump	25.76	9.05	8.73	Pump	25.76	8.60	8.30
Air Displacement	3.96	2.17	2.06	Air Displacement	3.96	2.12	2.02
Compression	69.46	41.02	45.72	Compression	69.46	38.15	42.52
Conveyance	.04	.00	.00	Conveyance	.04	.00	.00
Other	.23	.00	.00	Other	.23	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	.00	.00	.00	Light	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Total	99.45	52.24	56.52	Total	99.45	48.87	52.84

PART 5

PETROLEUM REFINING

Table 1: High Growth Scenario, Electricity Demand

Industry:Petroleum Refining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	380	390	390		
Natural	380	351	336	10.0%	13.9%
Econ 1	380	161	155	58.7%	60.4%
Econ 2	380	158	152	59.4%	61.0%
Econ 3	380	157	150	59.8%	61.4%
Econ 4	380	153	147	60.7%	62.3%
Econ 5	380	149	143	61.8%	63.3%
Tech Pot	380	160	154	58.9%	60.5%
Tech Soc	380	144	138	63.2%	64.6%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry:Petroleum Refining
Cons. Pot. Rev. High Output
Auxiliary unit electical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run						Run					
Frozen	300.2	307.9	307.9			Frozen	.00	.00	.00		
Natural	300.2	279.2	266.3	9.3%	13.5%	Natural	.00	.00	.00		
Econ 1	300.2	116.6	111.2	62.1%	63.9%	Econ 1	.00	.00	.00		
Econ 2	300.2	114.8	109.5	62.7%	64.4%	Econ 2	.00	.00	.00		
Econ 3	300.2	113.6	108.3	63.1%	64.8%	Econ 3	.00	.00	.00		
Econ 4	300.2	111.2	106.1	63.9%	65.5%	Econ 4	.00	.00	.00		
Econ 5	300.2	108.3	103.3	64.8%	66.5%	Econ 5	.00	.00	.00		
Tech Pot	300.2	116.1	110.7	62.3%	64.0%	Tech Pot	.00	.00	.00		
Tech Soc	300.2	104.5	99.6	66.1%	67.6%	Tech Soc	.00	.00	.00		

Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run						Run					
Frozen	16.96	17.11	17.11			Frozen	.00	.00	.00		
Natural	16.96	15.39	14.33	10.0%	16.3%	Natural	.00	.00	.00		
Econ 1	16.96	9.68	9.24	43.4%	46.0%	Econ 1	.00	.00	.00		
Econ 2	16.96	9.61	9.16	43.9%	46.5%	Econ 2	.00	.00	.00		
Econ 3	16.96	9.56	9.12	44.2%	46.7%	Econ 3	.00	.00	.00		
Econ 4	16.96	9.46	9.02	44.7%	47.3%	Econ 4	.00	.00	.00		
Econ 5	16.96	9.33	8.90	45.5%	48.0%	Econ 5	.00	.00	.00		
Tech Pot	16.96	9.64	9.20	43.7%	46.3%	Tech Pot	.00	.00	.00		
Tech Soc	16.96	9.16	8.74	46.5%	48.9%	Tech Soc	.00	.00	.00		

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run					
Frozen	47.94	48.50	48.50		
Natural	47.94	43.05	41.97	11.2%	13.5%
Econ 1	47.94	25.29	24.64	47.9%	49.2%
Econ 2	47.94	24.71	24.08	49.0%	50.4%
Econ 3	47.94	24.32	23.70	49.8%	51.1%
Econ 4	47.94	23.56	22.95	51.4%	52.7%
Econ 5	47.94	22.61	22.03	53.4%	54.6%
Tech Pot	47.94	25.18	24.53	48.1%	49.4%
Tech Soc	47.94	21.40	20.85	55.9%	57.0%

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: Petroleum Refining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	365.06	373.47	373.48
Pump	300.16	307.86	307.87
Air Displacement	16.96	17.11	17.11
Compression	47.94	48.50	48.50
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	14.51	14.51
Other	1.73	1.90	1.90
Total	380.08	389.87	389.89

Natural Run Technology	1988	2000	2010
Machine Drive	365.06	337.68	322.63
Pump	300.16	279.23	266.33
Air Displacement	16.96	15.39	14.33
Compression	47.94	43.05	41.97
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	11.48	10.99
Other	1.73	1.90	1.90
Total	380.08	351.05	335.51

Economic 1 Run Technology	1988	2000	2010
Machine Drive	365.06	151.53	145.06
Pump	300.16	116.56	111.18
Air Displacement	16.96	9.68	9.24
Compression	47.94	25.29	24.64
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.55	7.55
Other	1.73	1.90	1.90
Total	380.08	160.98	154.51

Economic 2 Run Technology	1988	2000	2010
Machine Drive	365.06	149.08	142.71
Pump	300.16	114.76	109.47
Air Displacement	16.96	9.61	9.16
Compression	47.94	24.71	24.08
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.44	7.44
Other	1.73	1.88	1.88
Total	380.08	158.40	152.03

Economic 3 Run Technology	1988	2000	2010
Machine Drive	365.06	147.45	141.14
Pump	300.16	113.57	108.32
Air Displacement	16.96	9.56	9.12
Compression	47.94	24.32	23.70
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.36	7.36
Other	1.73	1.87	1.87
Total	380.08	156.68	150.38

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: Petroleum Refining
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	365.06	144.21	138.04
Pump	300.16	111.20	106.07
Air Displacement	16.96	9.46	9.02
Compression	47.94	23.56	22.95
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.21	7.21
Other	1.73	1.85	1.85
Total	380.08	153.28	147.11

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	365.06	140.20	134.20
Pump	300.16	108.27	103.27
Air Displacement	16.96	9.33	8.90
Compression	47.94	22.61	22.03
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.02	7.02
Other	1.73	1.83	1.83
Total	380.08	149.06	143.05

Technological Run			
Technology	1988	2000	2010
Machine Drive	365.06	150.90	144.45
Pump	300.16	116.08	110.72
Air Displacement	16.96	9.64	9.20
Compression	47.94	25.18	24.53
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	7.55	7.55
Other	1.73	1.90	1.90
Total	380.08	160.35	153.90

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	365.06	135.03	129.24
Pump	300.16	104.47	99.65
Air Displacement	16.96	9.16	8.74
Compression	47.94	21.40	20.85
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	6.80	6.80
Other	1.73	1.80	1.80
Total	380.08	143.63	137.84

Table 1: Low Growth Scenario, Electricity Demand

 Industry:Petroleum Refining
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	380	313	313		
Natural	380	282	269	9.9%	14.3%
Econ 1	380	130	124	58.6%	60.3%
Econ 2	380	128	122	59.3%	60.9%
Econ 3	380	126	121	59.7%	61.3%
Econ 4	380	123	118	60.6%	62.2%
Econ 5	380	120	115	61.7%	63.2%
Tech Pot	380	129	124	58.8%	60.4%
Tech Soc	380	116	111	63.1%	64.6%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

 Industry:Petroleum Refining
 Cons. Pot. Rev. Low Output
 Auxiliary unit electical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	300.2	246.3	246.3			Frozen	.00	.00	.00		
Natural	300.2	223.4	213.1	9.3%	13.5%	Natural	.00	.00	.00		
Econ 1	300.2	93.3	88.9	62.1%	63.9%	Econ 1	.00	.00	.00		
Econ 2	300.2	91.8	87.6	62.7%	64.4%	Econ 2	.00	.00	.00		
Econ 3	300.2	90.9	86.7	63.1%	64.8%	Econ 3	.00	.00	.00		
Econ 4	300.2	89.0	84.9	63.9%	65.5%	Econ 4	.00	.00	.00		
Econ 5	300.2	86.6	82.6	64.8%	66.5%	Econ 5	.00	.00	.00		
Tech Pot	300.2	92.9	88.6	62.3%	64.0%	Tech Pot	.00	.00	.00		
Tech Soc	300.2	83.6	79.7	66.1%	67.6%	Tech Soc	.00	.00	.00		

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	16.96	13.69	13.69			Frozen	.00	.00	.00		
Natural	16.96	12.36	11.47	9.7%	16.2%	Natural	.00	.00	.00		
Econ 1	16.96	7.75	7.39	43.4%	46.0%	Econ 1	.00	.00	.00		
Econ 2	16.96	7.69	7.33	43.9%	46.5%	Econ 2	.00	.00	.00		
Econ 3	16.96	7.65	7.29	44.2%	46.7%	Econ 3	.00	.00	.00		
Econ 4	16.96	7.57	7.22	44.7%	47.3%	Econ 4	.00	.00	.00		
Econ 5	16.96	7.47	7.12	45.5%	48.0%	Econ 5	.00	.00	.00		
Tech Pot	16.96	7.71	7.36	43.7%	46.3%	Tech Pot	.00	.00	.00		
Tech Soc	16.96	7.33	6.99	46.5%	48.9%	Tech Soc	.00	.00	.00		

Compression					
% FROM FROZEN					
Run	1988	2000	2010	2000	2010
Frozen	47.94	38.80	38.80		
Natural	47.94	34.44	33.58	11.2%	13.5%
Econ 1	47.94	20.24	19.72	47.8%	49.2%
Econ 2	47.94	19.77	19.26	49.0%	50.4%
Econ 3	47.94	19.46	18.96	49.8%	51.1%
Econ 4	47.94	18.85	18.36	51.4%	52.7%
Econ 5	47.94	18.09	17.62	53.4%	54.6%
Tech Pot	47.94	20.14	19.63	48.1%	49.4%
Tech Soc	47.94	17.12	16.68	55.9%	57.0%

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry: Petroleum Refining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	365.06	298.79	298.78
Pump	300.16	246.30	246.29
Air Displacement	16.96	13.69	13.69
Compression	47.94	38.80	38.80
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	12.83	12.83
Other	1.73	1.68	1.68

Total 380.08 313.30 313.29

Natural Run			
Technology	1988	2000	2010
Machine Drive	365.06	270.20	258.10
Pump	300.16	223.40	213.06
Air Displacement	16.96	12.36	11.47
Compression	47.94	34.44	33.58
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	10.30	8.84
Other	1.73	1.68	1.68

Total 380.08 282.18 268.62

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	365.06	121.24	116.05
Pump	300.16	93.25	88.94
Air Displacement	16.96	7.75	7.39
Compression	47.94	20.24	19.72
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	6.68	6.68
Other	1.73	1.68	1.68

Total 380.08 129.60 124.41

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	365.06	119.27	114.17
Pump	300.16	91.82	87.57
Air Displacement	16.96	7.69	7.33
Compression	47.94	19.77	19.26
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	6.58	6.58
Other	1.73	1.67	1.67

Total 380.08 127.53 122.42

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	365.06	117.97	112.91
Pump	300.16	90.86	86.66
Air Displacement	16.96	7.65	7.29
Compression	47.94	19.46	18.96
Conveyance	.00	.00	.00
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	.00	.00	.00
Light	13.29	6.51	6.51
Other	1.73	1.66	1.66

Total 380.08 126.14 121.09

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry: Petroleum Refining
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	365.06	115.38	110.44	Machine Drive	365.06	112.17	107.36
Pump	300.16	88.97	84.86	Pump	300.16	86.62	82.62
Air Displacement	16.96	7.57	7.22	Air Displacement	16.96	7.47	7.12
Compression	47.94	18.85	18.36	Compression	47.94	18.09	17.62
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	13.29	6.38	6.38	Light	13.29	6.21	6.21
Other	1.73	1.65	1.65	Other	1.73	1.63	1.63
Total	380.08	123.41	118.46	Total	380.08	120.01	115.20

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	365.06	120.72	115.56	Machine Drive	365.06	108.03	103.39
Pump	300.16	92.86	88.57	Pump	300.16	83.57	79.72
Air Displacement	16.96	7.71	7.36	Air Displacement	16.96	7.33	6.99
Compression	47.94	20.14	19.63	Compression	47.94	17.12	16.68
Conveyance	.00	.00	.00	Conveyance	.00	.00	.00
Other	.00	.00	.00	Other	.00	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	.00	.00	.00	Process Heat	.00	.00	.00
Light	13.29	6.68	6.68	Light	13.29	6.01	6.01
Other	1.73	1.68	1.68	Other	1.73	1.60	1.60
Total	380.08	129.08	123.92	Total	380.08	115.64	111.00

PART 6

OTHER MANUFACTURING

Table 1: High Growth Scenario, Electricity Demand

Industry:OTHERMAN

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1725	2200	2679		
Natural	1725	2052	2425	6.7%	9.5%
Econ 1	1725	1385	1660	37.1%	38.0%
Econ 2	1725	1368	1640	37.8%	38.8%
Econ 3	1725	1357	1627	38.3%	39.3%
Econ 4	1725	1336	1601	39.3%	40.2%
Econ 5	1725	1309	1569	40.5%	41.4%
Tech Pot	1725	1375	1648	37.5%	38.5%
Tech Soc	1725	1268	1520	42.4%	43.3%

Table 2: High Growth, Electrical Demand in Auxiliary Units

Industry:OTHERMAN

Cons. Pot. Rev. High Output

Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	600	764	932			Frozen	506	641	781		
Natural	600	693	806	9.3%	13.5%	Natural	506	631	767	1.5%	1.8%
Econ 1	600	289	336	62.1%	63.9%	Econ 1	506	512	625	20.1%	20.1%
Econ 2	600	285	331	62.7%	64.4%	Econ 2	506	508	620	20.7%	20.7%
Econ 3	600	282	328	63.1%	64.8%	Econ 3	506	506	616	21.1%	21.1%
Econ 4	600	276	321	63.9%	65.5%	Econ 4	506	500	610	21.9%	21.9%
Econ 5	600	269	313	64.8%	66.5%	Econ 5	506	494	602	22.9%	22.9%
Tech Pot	600	288	335	62.3%	64.0%	Tech Pot	506	509	621	20.5%	20.5%
Tech Soc	600	259	302	66.1%	67.6%	Tech Pot	506	484	590	24.5%	24.5%

Air Displacement						Process drives					
% FROM FROZEN						% FROM FROZEN					
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	75	96	117			Frozen	36	45	55		
Natural	75	87	98	10.0%	16.3%	Natural	36	45	55	-.0%	-.0%
Econ 1	75	54	63	43.4%	46.0%	Econ 1	36	44	54	1.6%	1.6%
Econ 2	75	54	63	43.9%	46.5%	Econ 2	36	44	54	1.9%	1.9%
Econ 3	75	54	62	44.2%	46.7%	Econ 3	36	44	54	2.1%	2.1%
Econ 4	75	53	62	44.7%	47.3%	Econ 4	36	44	54	2.5%	2.5%
Econ 5	75	52	61	45.5%	48.0%	Econ 5	36	44	53	3.1%	3.1%
Tech Pot	75	54	63	43.6%	46.3%	Tech Pot	36	39	48	13.2%	13.2%
Tech Soc	75	51	60	46.5%	48.9%	Tech Soc	36	38	47	14.9%	14.9%

Compression					
% FROM FROZEN					
Run	1988	2000	2010	2000	2010
Frozen	130	167	203		
Natural	130	148	176	11.2%	13.5%
Econ 1	130	87	103	47.8%	49.2%
Econ 2	130	85	101	49.0%	50.4%
Econ 3	130	84	99	49.8%	51.1%
Econ 4	130	81	96	51.4%	52.7%
Econ 5	130	78	92	53.4%	54.6%
Tech Pot	130	86	103	48.1%	49.4%
Tech Soc	130	74	87	55.9%	57.0%

Table 3: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	1347.22	1713.05	2088.28
Pump	600.33	764.36	931.79
Air Displacement	75.44	96.16	117.23
Compression	130.33	166.55	203.03
Conveyance	505.52	640.86	781.23
Other	35.59	45.12	55.01
Electrolysis	.00	.00	.00
Process Heat	184.15	233.46	273.79
Light	143.03	187.23	233.47
Other	50.84	66.63	83.08
Total	1725.23	2200.36	2678.62

Natural Run Technology	1988	2000	2010
Machine Drive	1347.22	1603.79	1901.98
Pump	600.33	693.33	806.07
Air Displacement	75.44	86.51	98.16
Compression	130.33	147.84	175.70
Conveyance	505.52	630.97	767.04
Other	35.59	45.14	55.02
Electrolysis	.00	.00	.00
Process Heat	184.15	233.46	273.53
Light	143.03	148.12	166.51
Other	50.84	66.63	83.08
Total	1725.23	2051.99	2425.11

Economic 1 Run Technology	1988	2000	2010
Machine Drive	1347.22	987.42	1181.60
Pump	600.33	289.40	336.50
Air Displacement	75.44	54.42	63.27
Compression	130.33	86.86	103.16
Conveyance	505.52	512.32	624.52
Other	35.59	44.42	54.15
Electrolysis	.00	.00	.00
Process Heat	184.15	233.46	273.53
Light	143.03	97.48	121.55
Other	50.84	66.63	83.08
Total	1725.23	1384.98	1659.77

Economic 2 Run Technology	1988	2000	2010
Machine Drive	1712.27	1125.46	1316.96
Pump	900.50	399.71	445.20
Air Displacement	92.40	63.60	72.31
Compression	178.26	109.57	125.84
Conveyance	505.52	508.32	619.64
Other	35.59	44.27	53.97
Electrolysis	.00	.00	.00
Process Heat	184.15	104.87	127.85
Light	156.32	101.64	123.90
Other	52.57	66.24	80.74
Total	2105.31	1398.22	1649.44

Economic 3 Run Technology	1988	2000	2010
Machine Drive	1347.22	969.03	1159.75
Pump	600.33	281.98	327.86
Air Displacement	75.44	53.70	62.44
Compression	130.33	83.53	99.22
Conveyance	505.52	505.65	616.39
Other	35.59	44.17	53.84
Electrolysis	.00	.00	.00
Process Heat	184.15	227.62	266.69
Light	143.03	95.04	118.52
Other	50.84	65.79	82.04
Total	1725.23	1357.48	1627.00

Table 3: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN

Cons. Pot. Rev. High Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	1347.22	954.54	1142.53
Pump	600.33	276.10	321.03
Air Displacement	75.44	53.14	61.79
Compression	130.33	80.90	96.09
Conveyance	505.52	500.42	610.01
Other	35.59	43.98	53.61
Electolysis	.00	.00	.00
Process Heat	184.15	222.95	261.22
Light	143.03	93.09	116.08
Other	50.84	65.13	81.21
Total	1725.23	1335.71	1601.05

Technological Run			
Technology	1988	2000	2010
Machine Drive	1347.22	977.48	1169.58
Pump	600.33	288.22	335.12
Air Displacement	75.44	54.19	63.01
Compression	130.33	86.47	102.71
Conveyance	505.52	509.43	621.00
Other	35.59	39.17	47.75
Electolysis	.00	.00	.00
Process Heat	184.15	233.46	273.53
Light	143.03	97.48	121.55
Other	50.84	66.63	83.08
Total	1725.23	1375.04	1647.74

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	1347.22	936.60	1121.21
Pump	600.33	268.82	312.56
Air Displacement	75.44	52.45	60.98
Compression	130.33	77.63	92.20
Conveyance	505.52	493.97	602.14
Other	35.59	43.75	53.33
Electolysis	.00	.00	.00
Process Heat	184.15	217.11	254.38
Light	143.03	90.65	113.05
Other	50.84	64.29	80.17
Total	1725.23	1308.66	1568.81

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	1347.22	906.72	1085.51
Pump	600.33	259.39	301.61
Air Displacement	75.44	51.48	59.86
Compression	130.33	73.50	87.30
Conveyance	505.52	483.96	589.95
Other	35.59	38.39	46.79
Electolysis	.00	.00	.00
Process Heat	184.15	210.11	246.18
Light	143.03	87.73	109.40
Other	50.84	63.29	78.93
Total	1725.23	1267.86	1520.01

Table 4: High Growth Scenario, Electricity Demand for Process 1

Industry:OTHERMAN Process: Agriculture
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	103	118	144		
Natural	103	108	126	8.6%	12.6%
Econ 1	103	54	63	54.7%	56.3%
Econ 2	103	53	62	55.3%	56.9%
Econ 3	103	52	62	55.7%	57.3%
Econ 4	103	51	61	56.6%	58.1%
Econ 5	103	50	59	57.6%	59.1%
Tech Pot	103	53	63	54.8%	56.4%
Tech Soc	103	49	57	59.0%	60.4%

Table 5: High Growth, Electrical Demand in Auxiliary Units for Process 1

Industry:OTHERMAN Process: Agriculture
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping			% FROM FROZEN			Conveyance			% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	85.6	97.6	119.0			Frozen	7.92	8.85	10.79		
Natural	85.6	88.6	103.0	9.3%	13.5%	Natural	7.92	8.71	10.59	1.5%	1.8%
Econ 1	85.6	37.0	43.0	62.1%	63.9%	Econ 1	7.92	7.07	8.62	20.1%	20.1%
Econ 2	85.6	36.4	42.3	62.7%	64.4%	Econ 2	7.92	7.02	8.55	20.7%	20.7%
Econ 3	85.6	36.0	41.9	63.1%	64.8%	Econ 3	7.92	6.98	8.51	21.1%	21.1%
Econ 4	85.6	35.3	41.0	63.9%	65.5%	Econ 4	7.92	6.91	8.42	21.9%	21.9%
Econ 5	85.6	34.3	39.9	64.8%	66.5%	Econ 5	7.92	6.82	8.31	22.9%	22.9%
Tech Pot	85.6	36.8	42.8	62.3%	64.0%	Tech Pot	7.92	7.03	8.57	20.5%	20.5%
Tech Soc	85.6	33.1	38.5	66.1%	67.6%	Tech Soc	7.92	6.68	8.14	24.5%	24.5%

Air Displacement				% FROM FROZEN		Process drives				% FROM FROZEN	
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	.00	.00	.00			Frozen	.00	.00	.00		
Natural	.00	.00	.00			Natural	.00	.00	.00		
Econ 1	.00	.00	.00			Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00			Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00			Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00			Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00			Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00			Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00			Tech Soc	.00	.00	.00		

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 6: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Agriculture
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run	1988	2000	2010
Technology			
Machine Drive	93.57	106.47	129.79
Pump	85.65	97.62	119.01
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	8.85	10.79
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	5.42	6.61
Light	3.91	4.71	5.88
Other	1.42	1.71	2.14
Total	103.16	118.31	144.42

Natural Run	1988	2000	2010
Technology			
Machine Drive	93.57	97.26	113.54
Pump	85.65	88.55	102.95
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	8.71	10.59
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	5.42	6.35
Light	3.91	3.72	4.20
Other	1.42	1.71	2.14
Total	103.16	108.12	126.23

Economic 1 Run	1988	2000	2010
Technology			
Machine Drive	93.57	44.04	51.60
Pump	85.65	36.96	42.98
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	7.07	8.62
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	5.42	6.35
Light	3.91	2.45	3.06
Other	1.42	1.71	2.14
Total	103.16	53.62	63.15

Economic 2 Run	1988	2000	2010
Technology			
Machine Drive	93.57	43.41	50.87
Pump	85.65	36.39	42.32
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	7.02	8.55
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	5.34	6.25
Light	3.91	2.41	3.02
Other	1.42	1.70	2.12
Total	103.16	52.86	62.27

Economic 3 Run	1988	2000	2010
Technology			
Machine Drive	93.57	42.99	50.38
Pump	85.65	36.01	41.87
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.98	8.51
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	5.28	6.19
Light	3.91	2.39	2.99
Other	1.42	1.69	2.11
Total	103.16	52.36	61.67

Table 6: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Agriculture
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	93.57	42.17	49.42	Machine Drive	93.57	41.15	48.23
Pump	85.65	35.26	41.00	Pump	85.65	34.33	39.92
Air Displacement	.00	.00	.00	Air Displacement	.00	.00	.00
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	7.92	6.91	8.42	Conveyance	7.92	6.82	8.31
Other	.00	.00	.00	Other	.00	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	4.27	5.18	6.06	Process Heat	4.27	5.04	5.91
Light	3.91	2.34	2.93	Light	3.91	2.28	2.85
Other	1.42	1.67	2.09	Other	1.42	1.65	2.06
Total	103.16	51.36	60.50	Total	103.16	50.12	59.05
Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	93.57	43.84	51.37	Machine Drive	93.57	39.81	46.67
Pump	85.65	36.81	42.80	Pump	85.65	33.13	38.52
Air Displacement	.00	.00	.00	Air Displacement	.00	.00	.00
Compression	.00	.00	.00	Compression	.00	.00	.00
Conveyance	7.92	7.03	8.57	Conveyance	7.92	6.68	8.14
Other	.00	.00	.00	Other	.00	.00	.00
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	4.27	5.42	6.35	Process Heat	4.27	4.88	5.71
Light	3.91	2.45	3.06	Light	3.91	2.21	2.76
Other	1.42	1.71	2.14	Other	1.42	1.63	2.03
Total	103.16	53.42	62.93	Total	103.16	48.52	57.17

Table 7: High Growth Scenario, Electricity Demand for Process 2

Industry:OTHERMAN Process: Other Manufacturing
 Cons. Pot. Rev. High Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand			% FROM FROZEN		
	1988	2000	2010	2000	2010
Frozen	1622	2082	2534		
Natural	1622	1944	2299	6.6%	9.3%
Econ 1	1622	1331	1597	36.1%	37.0%
Econ 2	1622	1316	1578	36.8%	37.7%
Econ 3	1622	1305	1565	37.3%	38.2%
Econ 4	1622	1284	1541	38.3%	39.2%
Econ 5	1622	1259	1510	39.6%	40.4%
Tech Pot	1622	1322	1585	36.5%	37.5%
Tech Soc	1622	1219	1463	41.4%	42.3%

Table 8: High Growth, Electrical Demand in Auxiliary Units

Industry:OTHERMAN Process: Other Manufacturing
 Cons. Pot. Rev. High Output
 Auxiliary unit electrical demands (GWh)

Pumping			% FROM FROZEN			Conveyance			% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	514.7	666.7	812.8			Frozen	497.60	632.01	770.44		
Natural	514.7	604.8	703.1	9.3%	13.5%	Natural	497.60	622.26	756.45	1.5%	1.8%
Econ 1	514.7	252.4	293.5	62.1%	63.9%	Econ 1	497.60	505.25	615.90	20.1%	20.1%
Econ 2	514.7	248.6	289.0	62.7%	64.4%	Econ 2	497.60	501.30	611.08	20.7%	20.7%
Econ 3	514.7	246.0	286.0	63.1%	64.8%	Econ 3	497.60	498.67	607.88	21.1%	21.1%
Econ 4	514.7	240.8	280.0	63.9%	65.5%	Econ 4	497.60	493.52	601.59	21.9%	21.9%
Econ 5	514.7	234.5	272.6	64.8%	66.5%	Econ 5	497.60	487.15	593.83	22.9%	22.9%
Tech Pot	514.7	251.4	292.3	62.3%	64.0%	Tech Pot	497.60	502.40	612.42	20.5%	20.5%
Tech Soc	514.7	226.3	263.1	66.1%	67.6%	Tech Soc	497.60	477.28	581.80	24.5%	24.5%

Air Displacement			% FROM FROZEN			Process drives			% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	75.44	96.16	117.23			Frozen	35.59	45.12	55.01		
Natural	75.44	86.51	98.16	10.0%	16.3%	Natural	35.59	45.14	55.02	- .0%	- .0%
Econ 1	75.44	54.42	63.27	43.4%	46.0%	Econ 1	35.59	44.42	54.15	1.6%	1.6%
Econ 2	75.44	53.99	62.77	43.9%	46.5%	Econ 2	35.59	44.27	53.97	1.9%	1.9%
Econ 3	75.44	53.70	62.44	44.2%	46.7%	Econ 3	35.59	44.17	53.84	2.1%	2.1%
Econ 4	75.44	53.14	61.79	44.7%	47.3%	Econ 4	35.59	43.98	53.61	2.5%	2.5%
Econ 5	75.44	52.45	60.98	45.5%	48.0%	Econ 5	35.59	43.75	53.33	3.1%	3.1%
Tech Pot	75.44	54.19	63.01	43.6%	46.3%	Tech Pot	35.59	39.17	47.75	13.2%	13.2%
Tech Soc	75.44	51.48	59.86	46.5%	48.9%	Tech Soc	35.59	38.39	46.79	14.9%	14.9%

Compression			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	130.33	166.55	203.03		
Natural	130.33	147.84	175.70	11.2%	13.5%
Econ 1	130.33	86.86	103.16	47.8%	49.2%
Econ 2	130.33	84.86	100.79	49.0%	50.4%
Econ 3	130.33	83.53	99.22	49.8%	51.1%
Econ 4	130.33	80.90	96.09	51.4%	52.7%
Econ 5	130.33	77.63	92.20	53.4%	54.6%
Tech Pot	130.33	86.47	102.71	48.1%	49.4%
Tech Soc	130.33	73.50	87.30	55.9%	57.0%

Table 9: High Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Other Manufacturing
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run Technology	1988	2000	2010
Machine Drive	1253.65	1606.58	1958.48
Pump	514.68	666.74	812.78
Air Displacement	75.44	96.16	117.23
Compression	130.33	166.55	203.03
Conveyance	497.60	632.01	770.44
Other	35.59	45.12	55.01
Electrolysis	.00	.00	.00
Process Heat	179.87	228.04	267.18
Light	139.12	182.52	227.59
Other	49.42	64.91	80.94
Total	1622.06	2082.06	2534.19

Natural Run Technology	1988	2000	2010
Machine Drive	1253.65	1506.53	1788.44
Pump	514.68	604.78	703.12
Air Displacement	75.44	86.51	98.16
Compression	130.33	147.84	175.70
Conveyance	497.60	622.26	756.45
Other	35.59	45.14	55.02
Electrolysis	.00	.00	.00
Process Heat	179.87	228.04	267.18
Light	139.12	144.40	162.32
Other	49.42	64.91	80.94
Total	1622.06	1943.88	2298.88

Economic 1 Run Technology	1988	2000	2010
Machine Drive	1253.65	943.39	1130.00
Pump	514.68	252.44	293.52
Air Displacement	75.44	54.42	63.27
Compression	130.33	86.86	103.16
Conveyance	497.60	505.25	615.90
Other	35.59	44.42	54.15
Electrolysis	.00	.00	.00
Process Heat	179.87	228.04	267.18
Light	139.12	95.03	118.49
Other	49.42	64.91	80.94
Total	1622.06	1331.36	1596.62

Economic 2 Run Technology	1988	2000	2010
Machine Drive	1253.65	932.97	1117.61
Pump	514.68	248.55	289.00
Air Displacement	75.44	53.99	62.77
Compression	130.33	84.86	100.79
Conveyance	497.60	501.30	611.08
Other	35.59	44.27	53.97
Electrolysis	.00	.00	.00
Process Heat	179.87	224.62	263.17
Light	139.12	93.60	116.71
Other	49.42	64.43	80.33
Total	1622.06	1315.62	1577.83

Economic 3 Run Technology	1988	2000	2010
Machine Drive	1253.65	926.04	1109.36
Pump	514.68	245.96	285.99
Air Displacement	75.44	53.70	62.44
Compression	130.33	83.53	99.22
Conveyance	497.60	498.67	607.88
Other	35.59	44.17	53.84
Electrolysis	.00	.00	.00
Process Heat	179.87	222.33	260.50
Light	139.12	92.65	115.53
Other	49.42	64.10	79.93
Total	1622.06	1305.13	1565.32

Table 9: High Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Other Manufacturing
Cons. Pot. Rev. High Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	1253.65	912.37	1093.11
Pump	514.68	240.84	280.03
Air Displacement	75.44	53.14	61.79
Compression	130.33	80.90	96.09
Conveyance	497.60	493.52	601.59
Other	35.59	43.98	53.61
Electrolysis	.00	.00	.00
Process Heat	179.87	217.77	255.16
Light	139.12	90.75	113.16
Other	49.42	63.45	79.12
Total	1622.06	1284.35	1540.54

Technological Run			
Technology	1988	2000	2010
Machine Drive	1253.65	933.64	1118.20
Pump	514.68	251.40	292.32
Air Displacement	75.44	54.19	63.01
Compression	130.33	86.47	102.71
Conveyance	497.60	502.40	612.42
Other	35.59	39.17	47.75
Electrolysis	.00	.00	.00
Process Heat	179.87	228.04	267.18
Light	139.12	95.03	118.49
Other	49.42	64.91	80.94
Total	1622.06	1321.62	1584.82

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	1253.65	895.45	1072.98
Pump	514.68	234.48	272.64
Air Displacement	75.44	52.45	60.98
Compression	130.33	77.63	92.20
Conveyance	497.60	487.15	593.83
Other	35.59	43.75	53.33
Electrolysis	.00	.00	.00
Process Heat	179.87	212.07	248.48
Light	139.12	88.38	110.20
Other	49.42	62.64	78.11
Total	1622.06	1258.54	1509.76

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	1253.65	866.91	1038.84
Pump	514.68	226.26	263.09
Air Displacement	75.44	51.48	59.86
Compression	130.33	73.50	87.30
Conveyance	497.60	477.28	581.80
Other	35.59	38.39	46.79
Electrolysis	.00	.00	.00
Process Heat	179.87	205.23	240.46
Light	139.12	85.53	106.64
Other	49.42	61.67	76.89
Total	1622.06	1219.34	1462.84

Table 1: Low Growth Scenario, Electricity Demand

Industry:OTHERMAN

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1725	1954	2160		
Natural	1725	1825	1957	6.6%	9.4%
Econ 1	1725	1230	1340	37.1%	38.0%
Econ 2	1725	1215	1324	37.8%	38.7%
Econ 3	1725	1206	1314	38.3%	39.2%
Econ 4	1725	1186	1293	39.3%	40.1%
Econ 5	1725	1162	1267	40.5%	41.4%
Tech Pot	1725	1221	1331	37.5%	38.4%
Tech Soc	1725	1126	1227	42.4%	43.2%

Table 2: Low Growth, Electrical Demand in Auxiliary Units

Industry:OTHERMAN

Cons. Pot. Rev. Low Output

Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	600	679	750			Frozen	506	569	629		
Natural	600	616	649	9.3%	13.5%	Natural	506	561	618	1.5%	1.8%
Econ 1	600	257	271	62.1%	63.9%	Econ 1	506	455	503	20.1%	20.1%
Econ 2	600	253	267	62.7%	64.4%	Econ 2	506	452	499	20.7%	20.7%
Econ 3	600	251	264	63.1%	64.8%	Econ 3	506	449	496	21.1%	21.1%
Econ 4	600	245	258	63.9%	65.5%	Econ 4	506	445	491	21.9%	21.9%
Econ 5	600	239	252	64.8%	66.5%	Econ 5	506	439	485	22.9%	22.9%
Tech Pot	600	256	270	62.3%	64.0%	Tech Pot	506	453	500	20.5%	20.5%
Tech Soc	600	230	243	66.1%	67.6%	Tech Pot	506	430	475	24.5%	24.5%

Air Displacement						Process drives					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	75	85	94			Frozen	36	40	44		
Natural	75	77	79	9.7%	16.2%	Natural	36	40	44	-.0%	-.0%
Econ 1	75	48	51	43.4%	46.0%	Econ 1	36	39	44	1.6%	1.6%
Econ 2	75	48	51	43.9%	46.5%	Econ 2	36	39	43	1.9%	1.9%
Econ 3	75	48	50	44.2%	46.7%	Econ 3	36	39	43	2.1%	2.1%
Econ 4	75	47	50	44.7%	47.3%	Econ 4	36	39	43	2.5%	2.5%
Econ 5	75	47	49	45.5%	48.0%	Econ 5	36	39	43	3.1%	3.1%
Tech Pot	75	48	51	43.6%	46.3%	Tech Pot	36	35	38	13.2%	13.2%
Tech Soc	75	46	48	46.5%	48.9%	Tech Soc	36	34	38	14.9%	14.9%

Compression					
			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	130	148	163		
Natural	130	131	141	11.2%	13.5%
Econ 1	130	77	83	47.8%	49.2%
Econ 2	130	75	81	49.0%	50.4%
Econ 3	130	74	80	49.8%	51.1%
Econ 4	130	72	77	51.4%	52.7%
Econ 5	130	69	74	53.4%	54.6%
Tech Pot	130	77	83	48.1%	49.4%
Tech Soc	130	65	70	55.9%	57.0%

Table 3: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison
Aggregate totals (GWh)

Natural Run	1988	2000	2010
Technology			
Machine Drive	1347.22	1425.45	1531.37
Pump	600.33	616.02	648.99
Air Displacement	75.44	77.15	79.06
Compression	130.33	131.35	141.46
Conveyance	505.52	560.81	617.57
Other	35.59	40.11	44.30
Electolysis	.00	.00	.00
Process Heat	184.15	207.42	224.61
Light	143.03	132.94	133.95
Other	50.84	59.20	66.89
Total	1725.23	1825.01	1956.82

Economic 2 Run	1988	2000	2010
Technology			
Machine Drive	1712.27	986.78	1057.24
Pump	900.50	344.99	356.09
Air Displacement	92.40	55.65	58.02
Compression	178.26	95.17	100.80
Conveyance	505.52	451.64	498.89
Other	35.59	39.33	43.45
Electolysis	.00	.00	.00
Process Heat	184.15	93.18	102.93
Light	156.32	89.89	99.29
Other	52.57	58.85	65.01
Total	2105.31	1228.71	1324.48

Frozen Run	1988	2000	2010
Technology			
Machine Drive	1347.22	1522.03	1681.33
Pump	600.33	679.13	750.20
Air Displacement	75.44	85.44	94.38
Compression	130.33	147.98	163.46
Conveyance	505.52	569.39	628.99
Other	35.59	40.09	44.29
Electolysis	.00	.00	.00
Process Heat	184.15	207.42	224.71
Light	143.03	165.59	187.11
Other	50.84	59.20	66.89
Total	1725.23	1954.24	2160.04

Economic 1 Run	1988	2000	2010
Technology			
Machine Drive	1347.22	877.32	951.35
Pump	600.33	257.13	270.93
Air Displacement	75.44	48.35	50.94
Compression	130.33	77.17	83.06
Conveyance	505.52	455.19	502.82
Other	35.59	39.47	43.60
Electolysis	.00	.00	.00
Process Heat	184.15	207.42	224.61
Light	143.03	86.21	97.42
Other	50.84	59.20	66.89
Total	1725.23	1230.15	1340.26

Economic 3 Run	1988	2000	2010
Technology			
Machine Drive	1347.22	860.98	933.75
Pump	600.33	250.53	263.97
Air Displacement	75.44	47.71	50.27
Compression	130.33	74.22	79.88
Conveyance	505.52	449.27	496.27
Other	35.59	39.24	43.35
Electolysis	.00	.00	.00
Process Heat	184.15	202.24	218.99
Light	143.03	84.05	94.98
Other	50.84	58.46	66.06
Total	1725.23	1205.73	1313.78

Table 3: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN

Cons. Pot. Rev. Low Output

Potential electricity conservation comparison

Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1347.22	848.11	919.89	Machine Drive	1347.22	832.17	902.72
Pump	600.33	245.32	258.47	Pump	600.33	238.84	251.65
Air Displacement	75.44	47.21	49.75	Air Displacement	75.44	46.60	49.10
Compression	130.33	71.88	77.36	Compression	130.33	68.97	74.24
Conveyance	505.52	444.62	491.14	Conveyance	505.52	438.89	484.80
Other	35.59	39.07	43.16	Other	35.59	38.87	42.93
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	184.15	198.09	214.50	Process Heat	184.15	192.90	208.89
Light	143.03	82.33	93.03	Light	143.03	80.18	90.60
Other	50.84	57.86	65.39	Other	50.84	57.12	64.55
Total	1725.23	1186.39	1292.81	Total	1725.23	1162.37	1266.76

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1347.22	868.49	941.66	Machine Drive	1347.22	805.62	873.97
Pump	600.33	256.08	269.82	Pump	600.33	230.47	242.83
Air Displacement	75.44	48.15	50.73	Air Displacement	75.44	45.74	48.19
Compression	130.33	76.83	82.69	Compression	130.33	65.30	70.29
Conveyance	505.52	452.63	499.98	Conveyance	505.52	430.00	474.98
Other	35.59	34.80	38.44	Other	35.59	34.11	37.68
Electrolysis	.00	.00	.00	Electrolysis	.00	.00	.00
Process Heat	184.15	207.42	224.61	Process Heat	184.15	186.68	202.15
Light	143.03	86.21	97.42	Light	143.03	77.59	87.67
Other	50.84	59.20	66.89	Other	50.84	56.24	63.55
Total	1725.23	1221.32	1330.58	Total	1725.23	1126.13	1227.35

Table 4: Low Growth Scenario, Electricity Demand for Process 1

 Industry:OTHERMAN Process: Agriculture
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	103	105	116		
Natural	103	96	102	8.6%	12.5%
Econ 1	103	48	51	54.7%	56.2%
Econ 2	103	47	50	55.3%	56.8%
Econ 3	103	47	50	55.7%	57.2%
Econ 4	103	46	49	56.6%	58.0%
Econ 5	103	45	48	57.6%	59.0%
Tech Pot	103	47	51	54.8%	56.3%
Tech Soc	103	43	46	59.0%	60.3%

Table 5: Low Growth, Electrical Demand in Auxiliary Units for Process 1

 Industry:OTHERMAN Process: Agriculture
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping	% FROM FROZEN					Conveyance	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	85.6	86.7	95.8			Run	7.92	7.86	8.68		
Frozen	85.6	86.7	95.8			Frozen	7.92	7.86	8.68		
Natural	85.6	78.7	82.9	9.3%	13.5%	Natural	7.92	7.74	8.53	1.5%	1.8%
Econ 1	85.6	32.8	34.6	62.1%	63.9%	Econ 1	7.92	6.28	6.94	20.1%	20.1%
Econ 2	85.6	32.3	34.1	62.7%	64.4%	Econ 2	7.92	6.24	6.89	20.7%	20.7%
Econ 3	85.6	32.0	33.7	63.1%	64.8%	Econ 3	7.92	6.20	6.85	21.1%	21.1%
Econ 4	85.6	31.3	33.0	63.9%	65.5%	Econ 4	7.92	6.14	6.78	21.9%	21.9%
Econ 5	85.6	30.5	32.1	64.8%	66.5%	Econ 5	7.92	6.06	6.69	22.9%	22.9%
Tech Pot	85.6	32.7	34.5	62.3%	64.0%	Tech Pot	7.92	6.25	6.90	20.5%	20.5%
Tech Soc	85.6	29.4	31.0	66.1%	67.6%	Tech Soc	7.92	5.94	6.56	24.5%	24.5%

Air Displacement	% FROM FROZEN					Process drives	% FROM FROZEN				
	1988	2000	2010	2000	2010		1988	2000	2010	2000	2010
Run	.00	.00	.00			Run	.00	.00	.00		
Frozen	.00	.00	.00			Frozen	.00	.00	.00		
Natural	.00	.00	.00			Natural	.00	.00	.00		
Econ 1	.00	.00	.00			Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00			Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00			Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00			Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00			Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00			Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00			Tech Soc	.00	.00	.00		

Compression	% FROM FROZEN				
	1988	2000	2010	2000	2010
Run	.00	.00	.00		
Frozen	.00	.00	.00		
Natural	.00	.00	.00		
Econ 1	.00	.00	.00		
Econ 2	.00	.00	.00		
Econ 3	.00	.00	.00		
Econ 4	.00	.00	.00		
Econ 5	.00	.00	.00		
Tech Pot	.00	.00	.00		
Tech Soc	.00	.00	.00		

Table 6: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Agriculture
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run			
Technology	1988	2000	2010
Machine Drive	93.57	94.60	104.50
Pump	85.65	86.74	95.82
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	7.86	8.68
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	4.82	5.32
Light	3.91	4.16	4.72
Other	1.42	1.52	1.72
Total	103.16	105.10	116.26

Natural Run			
Technology	1988	2000	2010
Machine Drive	93.57	86.42	91.41
Pump	85.65	78.68	82.89
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	7.74	8.53
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	4.82	5.21
Light	3.91	3.34	3.38
Other	1.42	1.52	1.72
Total	103.16	96.10	101.73

Economic 1 Run			
Technology	1988	2000	2010
Machine Drive	93.57	39.13	41.54
Pump	85.65	32.84	34.60
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.28	6.94
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	4.82	5.21
Light	3.91	2.17	2.45
Other	1.42	1.52	1.72
Total	103.16	47.63	50.94

Economic 2 Run			
Technology	1988	2000	2010
Machine Drive	93.57	38.57	40.96
Pump	85.65	32.34	34.07
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.24	6.89
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	4.74	5.14
Light	3.91	2.13	2.42
Other	1.42	1.51	1.71
Total	103.16	46.96	50.22

Economic 3 Run			
Technology	1988	2000	2010
Machine Drive	93.57	38.20	40.57
Pump	85.65	32.00	33.71
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.20	6.85
Other	.00	.00	.00
Electolysis	.00	.00	.00
Process Heat	4.27	4.69	5.08
Light	3.91	2.11	2.39
Other	1.42	1.50	1.70
Total	103.16	46.51	49.74

Table 6: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Agriculture
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run			
Technology	1988	2000	2010
Machine Drive	93.57	37.47	39.79
Pump	85.65	31.33	33.01
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.14	6.78
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	4.27	4.60	4.98
Light	3.91	2.07	2.34
Other	1.42	1.49	1.68
Total	103.16	45.62	48.80

Technological Run			
Technology	1988	2000	2010
Machine Drive	93.57	38.96	41.36
Pump	85.65	32.71	34.46
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.25	6.90
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	4.27	4.82	5.21
Light	3.91	2.17	2.45
Other	1.42	1.52	1.72
Total	103.16	47.46	50.76

Economic 5 Run			
Technology	1988	2000	2010
Machine Drive	93.57	36.56	38.83
Pump	85.65	30.50	32.14
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	6.06	6.69
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	4.27	4.48	4.85
Light	3.91	2.02	2.28
Other	1.42	1.47	1.66
Total	103.16	44.52	47.63

Technological/Social Run			
Technology	1988	2000	2010
Machine Drive	93.57	35.37	37.57
Pump	85.65	29.44	31.01
Air Displacement	.00	.00	.00
Compression	.00	.00	.00
Conveyance	7.92	5.94	6.56
Other	.00	.00	.00
Electrolysis	.00	.00	.00
Process Heat	4.27	4.33	4.69
Light	3.91	1.95	2.21
Other	1.42	1.44	1.64
Total	103.16	43.10	46.11

Table 7: Low Growth Scenario, Electricity Demand for Process 2

Industry:OTHERMAN Process: Other Manufacturing
 Cons. Pot. Rev. Low Output
 Potential electricity conservation comparison
 Aggregate totals (GWh)

Aggregate Elect Demand	% FROM FROZEN				
	1988	2000	2010	2000	2010
Frozen	1622	1849	2044		
Natural	1622	1729	1855	6.5%	9.2%
Econ 1	1622	1183	1289	36.1%	36.9%
Econ 2	1622	1169	1274	36.8%	37.7%
Econ 3	1622	1159	1264	37.3%	38.2%
Econ 4	1622	1141	1244	38.3%	39.1%
Econ 5	1622	1118	1219	39.5%	40.3%
Tech Pot	1622	1174	1280	36.5%	37.4%
Tech Soc	1622	1083	1181	41.4%	42.2%

Table 8: Low Growth, Electrical Demand in Auxiliary Units

Industry:OTHERMAN Process: Other Manufacturing
 Cons. Pot. Rev. Low Output
 Auxiliary unit electrical demands (GWh)

Pumping						Conveyance					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	514.7	592.4	654.4			Frozen	497.60	561.53	620.30		
Natural	514.7	537.3	566.1	9.3%	13.5%	Natural	497.60	553.07	609.04	1.5%	1.8%
Econ 1	514.7	224.3	236.3	62.1%	63.9%	Econ 1	497.60	448.91	495.88	20.1%	20.1%
Econ 2	514.7	220.8	232.7	62.7%	64.4%	Econ 2	497.60	445.40	492.00	20.7%	20.7%
Econ 3	514.7	218.5	230.3	63.1%	64.8%	Econ 3	497.60	443.07	489.42	21.1%	21.1%
Econ 4	514.7	214.0	225.5	63.9%	65.5%	Econ 4	497.60	438.49	484.36	21.9%	21.9%
Econ 5	514.7	208.3	219.5	64.8%	66.5%	Econ 5	497.60	432.83	478.11	22.9%	22.9%
Tech Pot	514.7	223.4	235.4	62.3%	64.0%	Tech Pot	497.60	446.38	493.08	20.5%	20.5%
Tech Soc	514.7	201.0	211.8	66.1%	67.6%	Tech Soc	497.60	424.06	468.43	24.5%	24.5%

Air Displacement						Process drives					
			% FROM FROZEN						% FROM FROZEN		
Run	1988	2000	2010	2000	2010	Run	1988	2000	2010	2000	2010
Frozen	75.44	85.44	94.38			Frozen	35.59	40.09	44.29		
Natural	75.44	77.15	79.06	9.7%	16.2%	Natural	35.59	40.11	44.30	- .0%	- .0%
Econ 1	75.44	48.35	50.94	43.4%	46.0%	Econ 1	35.59	39.47	43.60	1.6%	1.6%
Econ 2	75.44	47.97	50.54	43.9%	46.5%	Econ 2	35.59	39.33	43.45	1.9%	1.9%
Econ 3	75.44	47.71	50.27	44.2%	46.7%	Econ 3	35.59	39.24	43.35	2.1%	2.1%
Econ 4	75.44	47.21	49.75	44.7%	47.3%	Econ 4	35.59	39.07	43.16	2.5%	2.5%
Econ 5	75.44	46.60	49.10	45.5%	48.0%	Econ 5	35.59	38.87	42.93	3.1%	3.1%
Tech Pot	75.44	48.15	50.73	43.6%	46.3%	Tech Pot	35.59	34.80	38.44	13.2%	13.2%
Tech Soc	75.44	45.74	48.19	46.5%	48.9%	Tech Soc	35.59	34.11	37.68	14.9%	14.9%

Compression					
			% FROM FROZEN		
Run	1988	2000	2010	2000	2010
Frozen	130.33	147.98	163.46		
Natural	130.33	131.35	141.46	11.2%	13.5%
Econ 1	130.33	77.17	83.06	47.8%	49.2%
Econ 2	130.33	75.40	81.15	49.0%	50.4%
Econ 3	130.33	74.22	79.88	49.8%	51.1%
Econ 4	130.33	71.88	77.36	51.4%	52.7%
Econ 5	130.33	68.97	74.24	53.4%	54.6%
Tech Pot	130.33	76.83	82.69	48.1%	49.4%
Tech Soc	130.33	65.30	70.29	55.9%	57.0%

Table 9: Low Growth, Electricity Demand by
Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Other Manufacturing
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Frozen Run	1988	2000	2010
Technology			
Machine Drive	1253.65	1427.43	1576.83
Pump	514.68	592.39	654.39
Air Displacement	75.44	85.44	94.38
Compression	130.33	147.98	163.46
Conveyance	497.60	561.53	620.30
Other	35.59	40.09	44.29
Electrolysis	.00	.00	.00
Process Heat	179.87	202.61	219.40
Light	139.12	161.42	182.40
Other	49.42	57.68	65.17
Total	1622.06	1849.14	2043.79

Natural Run	1988	2000	2010
Technology			
Machine Drive	1253.65	1339.03	1439.96
Pump	514.68	537.34	566.10
Air Displacement	75.44	77.15	79.06
Compression	130.33	131.35	141.46
Conveyance	497.60	553.07	609.04
Other	35.59	40.11	44.30
Electrolysis	.00	.00	.00
Process Heat	179.87	202.61	219.40
Light	139.12	129.60	130.57
Other	49.42	57.68	65.17
Total	1622.06	1728.91	1855.09

Economic 1 Run	1988	2000	2010
Technology			
Machine Drive	1253.65	838.19	909.80
Pump	514.68	224.29	236.32
Air Displacement	75.44	48.35	50.94
Compression	130.33	77.17	83.06
Conveyance	497.60	448.91	495.88
Other	35.59	39.47	43.60
Electrolysis	.00	.00	.00
Process Heat	179.87	202.61	219.40
Light	139.12	84.04	94.96
Other	49.42	57.68	65.17
Total	1622.06	1182.52	1289.33

Economic 2 Run	1988	2000	2010
Technology			
Machine Drive	1253.65	828.94	899.83
Pump	514.68	220.84	232.68
Air Displacement	75.44	47.97	50.54
Compression	130.33	75.40	81.15
Conveyance	497.60	445.40	492.00
Other	35.59	39.33	43.45
Electrolysis	.00	.00	.00
Process Heat	179.87	199.57	216.10
Light	139.12	82.78	93.54
Other	49.42	57.24	64.68
Total	1622.06	1168.53	1274.15

Economic 3 Run	1988	2000	2010
Technology			
Machine Drive	1253.65	822.78	893.18
Pump	514.68	218.54	230.26
Air Displacement	75.44	47.71	50.27
Compression	130.33	74.22	79.88
Conveyance	497.60	443.07	489.42
Other	35.59	39.24	43.35
Electrolysis	.00	.00	.00
Process Heat	179.87	197.54	213.91
Light	139.12	81.94	92.59
Other	49.42	56.95	64.35
Total	1622.06	1159.22	1264.04

Table 9: Low Growth, Electricity Demand by
Cont'd Auxiliary System and Technology Type
in Each Run.

Industry:OTHERMAN Process: Other Manufacturing
Cons. Pot. Rev. Low Output
Potential electricity conservation comparison
Aggregate totals (GWh)

Economic 4 Run				Economic 5 Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1253.65	810.64	880.09	Machine Drive	1253.65	795.60	863.89
Pump	514.68	213.98	225.46	Pump	514.68	208.34	219.51
Air Displacement	75.44	47.21	49.75	Air Displacement	75.44	46.60	49.10
Compression	130.33	71.88	77.36	Compression	130.33	68.97	74.24
Conveyance	497.60	438.49	484.36	Conveyance	497.60	432.83	478.11
Other	35.59	39.07	43.16	Other	35.59	38.87	42.93
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	179.87	193.49	209.52	Process Heat	179.87	188.43	204.04
Light	139.12	80.26	90.69	Light	139.12	78.16	88.31
Other	49.42	56.38	63.70	Other	49.42	55.66	62.89
Total	1622.06	1140.77	1244.01	Total	1622.06	1117.85	1219.13

Technological Run				Technological/Social Run			
Technology	1988	2000	2010	Technology	1988	2000	2010
Machine Drive	1253.65	829.53	900.30	Machine Drive	1253.65	770.25	836.40
Pump	514.68	223.37	235.35	Pump	514.68	201.04	211.82
Air Displacement	75.44	48.15	50.73	Air Displacement	75.44	45.74	48.19
Compression	130.33	76.83	82.69	Compression	130.33	65.30	70.29
Conveyance	497.60	446.38	493.08	Conveyance	497.60	424.06	468.43
Other	35.59	34.80	38.44	Other	35.59	34.11	37.68
Electolysis	.00	.00	.00	Electolysis	.00	.00	.00
Process Heat	179.87	202.61	219.40	Process Heat	179.87	182.35	197.46
Light	139.12	84.04	94.96	Light	139.12	75.64	85.46
Other	49.42	57.68	65.17	Other	49.42	54.79	61.91
Total	1622.06	1173.86	1279.83	Total	1622.06	1083.03	1181.23

