

Appendix H

Option 4 Equipment List and Preliminary Capital Cost Estimate

CONFIDENTIAL PROJECT
 Linnpac Paper Biogas/Cogen Power Project Cost Summary
 Solar Tarus

	FULL PROJECT COST	150,000 tonne/y	165,000 tpy
Capital Cost Summary		Canadian \$	U.S. \$
Raw & Finished Materials Handling	\$	980,000	725,926
BTA Equipment	\$	10,785,000	7,988,889
Cogeneration Equipment	\$	14,982,500	11,098,148
Auxiliary Equipment	\$	750,000	555,556
Building Costs	\$	10,805,000	8,003,704
Engineering	\$	6,405,000	4,744,444
Startup	\$	1,900,000	1,407,407
Optional Equipment	\$	-	-
Project Contingency @ 10%	\$	4,660,750	3,452,407
Total Project Capital Costs	\$	51,268,250	\$ 37,976,481

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Qty.	Description	Per unit Canadian \$	Per unit U.S. \$	Total Canadian \$	Total U.S. \$
Raw & Finished Materials Handling					
1	4 Cu. Yd. Loader	\$ 250,000	\$ 185,185	\$ 250,000	\$ 185,185
1	Bobcat	\$ 50,000	\$ 37,037	\$ 50,000	\$ 37,037
1	In-floor conveyor	\$ 80,000	\$ 59,259	\$ 80,000	\$ 59,259
1	Pulper distribution conveyors	\$ 100,000	\$ 74,074	\$ 100,000	\$ 74,074
1	Residuals chutes and collection bins	\$ 50,000	\$ 37,037	\$ 50,000	\$ 37,037
1	Residual Materials Baler	\$ 75,000	\$ 55,556	\$ 75,000	\$ 55,556
1	Solid Waste Compactor	\$ 75,000	\$ 55,556	\$ 75,000	\$ 55,556
1	Trommel Screen	\$ 300,000	\$ 222,222	\$ 300,000	\$ 222,222
Raw Materials Handling Total		\$ 980,000	\$ 725,926	\$ 980,000	\$ 725,926

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Qty.	Description	Per unit Canadian \$	Per unit US \$	Total Canadian \$	Total US \$
1	Mechanical Pre-treatment Trommel Screen Hydropulpers Hydrocyclone	300,000	222,222	300,000	222,222
1	Mixture Preparing Equipment Surge Tank Stage 1, Mixing Machinery and Motors Stage 2, Mixing Machinery and Motors Chemical adjustment (pH)	3,000,000	2,222,222	3,000,000	2,222,222
1	Digestion Equipment Stage 1, Hydrolysis Digestion Tank Stage 2, Methanizer Digestion Tank	6,000,000	4,444,444	6,000,000	4,444,444
1	Dewatering Equipment Screw Presses	420,000	311,111	420,000	311,111
1	Process Water Handling Treatment equipment Surge/Storage Tank	215,000	159,259	215,000	159,259
1	Biofilter Biofilter containment structures Biofilter media Biofilter distribution manifold and ductwork	450,000	333,333	450,000	333,333
1	Instrumentation and Controls	400,000	296,296	400,000	296,296
	BTA Equipment Total	10,785,000	7,988,889	10,785,000	7,988,889

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Qty.	Description	Per unit Canadian \$	Per unit U.S. \$	Total Canadian \$	Total U.S. \$
	Auxiliary Equipment				
1	Laboratory Equipment	\$ 100,000	\$ 74,074	\$ 100,000	\$ 74,074
1	Office Equipment	\$ 100,000	\$ 74,074	\$ 100,000	\$ 74,074
1	Tools	\$ 50,000	\$ 37,037	\$ 50,000	\$ 37,037
1	Spare Parts	\$ 500,000	\$ 370,370	\$ 500,000	\$ 370,370
	Auxiliary Equipment Total	\$ 750,000	\$ 555,556	\$ 750,000	\$ 555,556

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Qty.	Description	Per unit Canadian \$	Per unit U.S. \$	Total Canadian \$	Total U.S. \$
Building Costs					
1	Land (6 acres)	\$ 405,000	\$ 300,000	\$ 405,000	\$ 300,000
1	Site work	\$ 250,000	\$ 185,185	\$ 250,000	\$ 185,185
1	16,000 s.f. Base Building at \$75/s.f.	\$ 1,200,000	\$ 888,889	\$ 1,200,000	\$ 888,889
1	Utility Connections	\$ 450,000	\$ 333,333	\$ 450,000	\$ 333,333
1	Mechanical Equipment (HVAC, etc.)	\$ 1,000,000	\$ 740,741	\$ 1,000,000	\$ 740,741
1	Piping & Valves	\$ 1,500,000	\$ 1,111,111	\$ 1,500,000	\$ 1,111,111
1	Electrical	\$ 3,000,000	\$ 2,222,222	\$ 3,000,000	\$ 2,222,222
1	Special Construction	\$ 3,000,000	\$ 2,222,222	\$ 3,000,000	\$ 2,222,222
Building Costs Total		\$ 10,805,000	\$ 8,003,704	\$ 10,805,000	\$ 8,003,704

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Qty.	Description	Per unit		Total	
		Canadian \$	U.S. \$	Canadian \$	U.S. \$
1	Detailed Engineering	\$ 1,500,000	\$ 1,111,111	\$ 1,500,000	\$ 1,111,111
1	Environmental Engineering/Impact Study	\$ 405,000	\$ 300,000	\$ 405,000	\$ 300,000
1	Owner Project Management/Engineering	\$ 400,000	\$ 296,296	\$ 400,000	\$ 296,296
1	Construction Management	\$ 400,000	\$ 296,296	\$ 400,000	\$ 296,296
1	Consultant Contracts	\$ 200,000	\$ 148,148	\$ 200,000	\$ 148,148
1	Risk Fee	\$ 1,800,000	\$ 1,333,333	\$ 1,800,000	\$ 1,333,333
1	BTA License Fee	\$ 1,000,000	\$ 740,741	\$ 1,000,000	\$ 740,741
1	Construction & Financial Insurance	\$ 500,000	\$ 370,370	\$ 500,000	\$ 370,370
1	Permitting and fees	\$ 200,000	\$ 148,148	\$ 200,000	\$ 148,148
Engineering Total		\$ 6,405,000	\$ 4,744,444	\$ 6,405,000	\$ 4,744,444

