

**THE UNIVERSITY OF MONTANA-Missoula**  
**NEW BIOMASS BOILER PLANT (\$16 million)**  
**FINANCIAL PRO-FORMA (Posted 4-12-11)**

The following financial pro-forma is the most current available. As more specific information is received or new facts discovered relating to the biomass project, it will be updated to reflect the new information.

Year:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Natural Gas Projection</b>																					
CO2 displaced	8,000	metric tones / yr																			
Efficiency	80.0%																				
Avoided Natural Gas Usage	233,280	mil btus / yr																			
Thermal energy produced	186,624	mil btus / yr																			
Natural gas cost	\$ 9.27	per bdt (20yr avg)																			
	\$ 2,162,571	20yr annual avg																			
Escalation Rate	3.00%	20yr average																			
<b>Based on Fellon McCord Forecasting</b>	per bdt	\$ 6.90	\$ 7.93	\$ 8.48	\$ 9.20	\$ 9.28	\$ 9.52	\$ 9.68	\$ 9.76	\$ 9.99	\$ 10.31	\$ 10.40	\$ 10.63	\$ 10.79	\$ 11.03	\$ 11.11	\$ 11.43	\$ 11.43	\$ 11.51	\$ 11.67	\$ 11.99
<i>Estimated Total Cost</i>		\$ 1,609,632	\$ 1,849,467	\$ 1,978,930	\$ 2,145,160	\$ 2,164,466	\$ 2,220,743	\$ 2,258,495	\$ 2,276,563	\$ 2,331,201	\$ 2,405,799	\$ 2,425,045	\$ 2,480,822	\$ 2,518,034	\$ 2,573,431	\$ 2,591,445	\$ 2,666,596	\$ 2,666,596	\$ 2,685,263	\$ 2,722,856	\$ 2,796,373
<b>Woody Biomass Projection</b>																					
Project cost	\$ 16,000,000																				
Efficiency	70.6%																				
Biomass used	264,190	mil btus / yr																			
Thermal energy produced	186,624	mil btus / yr																			
Biomass required	15,624	bdt per yr																			
Biomass cost	\$ 2.75	per bdt (avg)																			
	\$ 70.29%	less than NG																			
	\$ 46.67	per bdt (avg)																			
Escalation Rate	\$ 727,690	20yr annual avg																			
	2.00%	20yr average																			
<b>Based on Request for Quotation from Local Vendors</b>	per bdt	\$ 40.00	\$ 40.80	\$ 41.62	\$ 42.45	\$ 43.30	\$ 44.16	\$ 45.05	\$ 45.95	\$ 46.87	\$ 47.80	\$ 48.76	\$ 49.73	\$ 50.73	\$ 51.74	\$ 52.78	\$ 53.83	\$ 54.91	\$ 56.01	\$ 57.13	\$ 58.27
<i>Estimated Total Cost</i>		\$ 624,965	\$ 637,464	\$ 650,214	\$ 663,218	\$ 676,482	\$ 690,012	\$ 703,812	\$ 717,888	\$ 732,246	\$ 746,891	\$ 761,289	\$ 777,066	\$ 792,607	\$ 808,459	\$ 824,628	\$ 841,121	\$ 857,943	\$ 875,102	\$ 892,604	\$ 910,456
<b>Economic Benefits</b>																					
Energy Cost Savings	\$ 984,667	\$ 1,212,003	\$ 1,328,716	\$ 1,481,942	\$ 1,487,984	\$ 1,530,731	\$ 1,554,683	\$ 1,558,675	\$ 1,598,955	\$ 1,658,908	\$ 1,663,756	\$ 1,703,756	\$ 1,725,427	\$ 1,764,972	\$ 1,766,816	\$ 1,825,476	\$ 1,808,653	\$ 1,810,161	\$ 1,830,252	\$ 1,885,917	
Carbon Credits	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	
<b>Total Economic Benefits</b>	\$ 1,024,667	\$ 1,252,003	\$ 1,368,716	\$ 1,521,942	\$ 1,527,984	\$ 1,570,731	\$ 1,594,683	\$ 1,598,675	\$ 1,638,955	\$ 1,698,908	\$ 1,703,756	\$ 1,743,756	\$ 1,765,427	\$ 1,804,972	\$ 1,806,816	\$ 1,865,476	\$ 1,848,653	\$ 1,850,161	\$ 1,870,252	\$ 1,925,917	
<b>Additional Operation &amp; Maintenance Expense</b>																					
Equipment Maintenance	\$ 96,620	\$ 99,519	\$ 102,504	\$ 105,579	\$ 108,747	\$ 112,009	\$ 115,369	\$ 118,830	\$ 122,395	\$ 126,067	\$ 129,849	\$ 133,745	\$ 137,757	\$ 141,890	\$ 146,146	\$ 150,531	\$ 155,047	\$ 159,698	\$ 164,489	\$ 169,424	
Labor	\$ 62,000	\$ 63,860	\$ 65,776	\$ 67,749	\$ 69,782	\$ 71,875	\$ 74,031	\$ 76,252	\$ 78,540	\$ 80,896	\$ 83,323	\$ 85,822	\$ 88,397	\$ 91,049	\$ 93,781	\$ 96,594	\$ 99,492	\$ 102,477	\$ 105,551	\$ 108,717	
Electricity	\$ 90,950	\$ 93,679	\$ 96,489	\$ 99,384	\$ 102,365	\$ 105,436	\$ 108,599	\$ 111,857	\$ 115,213	\$ 118,669	\$ 122,229	\$ 125,896	\$ 129,673	\$ 133,563	\$ 137,570	\$ 141,697	\$ 145,948	\$ 150,326	\$ 154,836	\$ 159,481	
Monitoring and Verification	\$ 103,772	\$ 107,135	\$ 110,596	\$ 114,157	\$ 117,818	\$ 121,479	\$ 125,140	\$ 128,801	\$ 132,462	\$ 136,123	\$ 139,784	\$ 143,445	\$ 147,106	\$ 150,767	\$ 154,428	\$ 158,089	\$ 161,750	\$ 165,411	\$ 169,072	\$ 172,733	
Consumables	\$ 29,640	\$ 30,529	\$ 31,445	\$ 32,388	\$ 33,360	\$ 34,361	\$ 35,392	\$ 36,453	\$ 37,547	\$ 38,673	\$ 39,834	\$ 41,029	\$ 42,260	\$ 43,527	\$ 44,833	\$ 46,178	\$ 47,563	\$ 48,990	\$ 50,460	\$ 51,974	
<b>Total Additional O&amp;M Expense</b>	\$ 382,982	\$ 394,722	\$ 400,810	\$ 412,754	\$ 420,668	\$ 434,760	\$ 444,332	\$ 458,238	\$ 472,570	\$ 487,346	\$ 502,575	\$ 518,274	\$ 534,456	\$ 551,137	\$ 568,331	\$ 586,053	\$ 604,321	\$ 623,151	\$ 642,559		
Funds Available for Debt Service	\$ 641,685	\$ 857,281	\$ 987,906	\$ 1,129,188	\$ 1,122,916	\$ 1,152,971	\$ 1,163,838	\$ 1,154,343	\$ 1,180,717	\$ 1,226,338	\$ 1,216,410	\$ 1,241,181	\$ 1,247,153	\$ 1,270,516	\$ 1,255,679	\$ 1,297,145	\$ 1,262,600	\$ 1,245,840	\$ 1,247,101	\$ 1,283,358	
<b>Summary of Debt Service and Risk Reserve</b>																					
Estimated Debt Service*	\$ 633,014	\$ 1,271,579	\$ 1,268,679	\$ 1,269,029	\$ 1,268,779	\$ 1,269,666	\$ 1,271,066	\$ 1,268,716	\$ 1,268,853	\$ 1,271,204	\$ 1,270,454	\$ 1,271,454	\$ 1,271,054	\$ 1,269,254	\$ 1,271,054	\$ 1,271,254	\$ 1,269,853	\$ 1,270,510	\$ 1,268,470	\$ 1,273,375	
Net after Debt Service	\$ 8,671	\$ (414,298)	\$ (280,773)	\$ (139,841)	\$ (145,863)	\$ (116,695)	\$ (107,228)	\$ (114,373)	\$ (88,136)	\$ (44,866)	\$ (54,044)	\$ (30,273)	\$ (23,901)	\$ 1,262	\$ (15,375)	\$ 25,891	\$ (7,253)	\$ (24,670)	\$ (21,369)	\$ 9,983	
QECC estimated subsidy**	\$ 166,000	\$ 163,000	\$ 152,000	\$ 145,000	\$ 137,000	\$ 126,000	\$ 115,000	\$ 104,000	\$ 94,000	\$ 81,000	\$ 70,000	\$ 59,000	\$ 48,000	\$ 36,000	\$ 24,000	\$ 12,000					
<b>Balance with QECC Subsidy</b>	\$ 174,671	\$ (251,298)	\$ (128,773)	\$ 5,159	\$ (8,863)	\$ 9,305	\$ 7,772	\$ (10,373)	\$ 5,864	\$ 36,134	\$ 15,956	\$ 28,727	\$ 24,099	\$ 37,262	\$ 8,625	\$ 37,891	\$ (7,253)	\$ (24,670)	\$ (21,369)	\$ 9,983	
Risk Reserve Assessment	\$ 191,491	\$ 197,361	\$ 190,405	\$ 196,377	\$ 202,534	\$ 208,880	\$ 215,423	\$ 222,166	\$ 229,119	\$ 236,285	\$ 243,673	\$ 251,288	\$ 259,137	\$ 267,228	\$ 275,569	\$ 284,166	\$ 293,027	\$ 302,161	\$ 311,576	\$ 321,280	
<b>RISK RESERVE</b>	\$ 366,162	\$ (53,937)	\$ 61,632	\$ 201,536	\$ 193,671	\$ 218,185	\$ 223,195	\$ 211,793	\$ 234,983	\$ 272,419	\$ 259,629	\$ 280,014	\$ 283,236	\$ 304,490	\$ 284,194	\$ 322,056	\$ 285,774	\$ 277,490	\$ 290,207	\$ 331,263	

\*Includes capitalized interest during project construction

\*\*Under the Qualified Energy Conservation Bonds (QECC) program, the federal government subsidizes 70% of the annual interest cost.

This amount represents \$7.0 million in QECC subsidy. However, the University is applying for an additional \$2.0 million that may be voluntarily turned back to the State by several other entities.

The University has received a \$180k grant from DNRC towards the \$16 million project. A grant application for additional funding from DNRC for the Biomass Project also has been submitted.