

LG&E - KU- Ghent Unit 1 PJFF Rev.B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-11

LOCATION: Carroll County, KY
 PLANT TYPE: PC Fired Boiler
 CLIENT: LG&E - KU
 PARTNER: N/A
 CURRENCY: US Dollars

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 541
		Engr Equip	Commodities					
		Material \$	Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$4,128,152	\$160,570	\$0	0	\$298,000	\$4,586,722	3.82%	\$8.48
61.3801	Ductwork and breeching	\$1,134,400	\$0	\$0	0	\$0	\$1,134,400	0.95%	\$2.10
62.0000	Mechanical - Balance of Plant - (BOP)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.09
63.0000	Electrical - (BOP) Equipment and raceway	\$290,000	\$1,062,495	\$0	0	\$0	\$1,352,495	1.13%	\$2.50
63.3002	VFDs, Motors and Couplings	\$2,778,000	\$0	\$0	0	\$0	\$2,778,000	2.31%	\$5.13
63.1202	Cable Bus	\$0	\$1,160,452	\$0	0	\$16,200	\$1,176,652	0.98%	\$2.17
63.3603	Switchgear and MCCs	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.33%	\$2.96
63.3802	SUS Transformers	\$239,752	\$0	\$0	0	\$0	\$239,752	0.20%	\$0.44
63.3803	Aux Transformers	\$417,000	\$0	\$0	0	\$0	\$417,000	0.35%	\$0.77
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.52%	\$1.16
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.47%	\$1.05
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	12.50%	\$27.73
65.3500	H-PAC Mercury Control	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.83%	\$1.85
66.1000	Piping & Tubing	\$303,018	\$0	\$0	0	\$495,000	\$798,018	0.66%	\$1.48
66.2070	Pipe Supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.07%	\$0.15
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.19%	\$0.43
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.21%	\$0.46
67.9532	ID Booster Fans	\$1,910,000	\$0	\$0	0	\$0	\$1,910,000	1.59%	\$3.53
Subtotal Purchase Contracts:		\$29,678,322	\$2,694,767	\$0	0	\$1,429,200	\$33,802,289	28.16%	\$62.48

Construction Contracts:

71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	\$0	\$1,239,000	\$1,239,000	1.03%	\$2.29
71.0403	Civil / Structural Construction - Super Structures	\$0	\$530,877	\$1,803,491	\$31,149	\$128,332	\$2,462,700	2.05%	\$4.55
71.0402	Civil / Structural Construction - Sub-Structures	\$0	\$15,000	\$7,139,859	\$103,162	\$1,025,000	\$8,179,859	6.81%	\$15.12
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,006,670	195,329	\$2,799,250	\$14,805,920	12.34%	\$27.37
73.0000	Electrical / Control Construction	\$0	\$182,000	\$4,598,787	73,604	\$10,800	\$4,791,587	3.99%	\$8.86
78.0000	Service Contracts & Construction Indirects	\$0	\$2,975,906	\$3,201,221	68,857	\$11,065,906	\$17,243,033	14.37%	\$31.87
Subtotal Construction Contracts:		\$0	\$3,703,783	\$28,750,028	472,102	\$16,268,288	\$48,722,099	40.59%	\$90.06

Total Direct Costs

\$29,678,322	\$6,398,550	\$28,750,028	472,102	\$17,697,488	\$82,524,388	68.75%	\$152.54
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Indirect Costs:

99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	5.10%	\$11.30
99.1200	EPC Construction Management (Includes G&A)	\$0	\$57,051	\$4,663,921	102,575	\$6,599,631	\$11,320,603	9.43%	\$20.93
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,370,908	\$1,370,908	1.14%	\$2.53
99.1600	Performance Bond	\$0	\$0	\$0	0	\$587,532	\$587,532	0.49%	\$1.09
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$58,683	\$0	0	\$0	\$58,683	0.05%	\$0.11
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$10,197,768	\$10,197,768	8.50%	\$18.85
99.2600	EPC Profit	\$0	\$0	\$0	0	\$7,852,000	\$7,852,000	6.54%	\$14.51
Total Indirect Costs		\$0	\$115,734	\$7,123,921	162,575	\$30,263,399	\$37,503,054	28.63%	\$69.32

Total Overnight (April 2011) EPC Capital Costs:

\$29,678,322	\$6,514,284	\$35,873,949	634,676	\$47,960,887	\$120,027,443	100.00%	\$221.86
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

LG&E - KU- Ghent Unit 1 PJFF Rev.B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-11

LOCATION: Carroll County, KY
 PLANT TYPE: PC Fired Boiler
 CLIENT: LG&E - KU
 PARTNER: N/A
 CURRENCY: US Dollars

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 541	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
ESTIMATE SUMMARY									
Purchase Contracts:									
61.0000	Civil / Structural	\$5,262,552	\$160,570	\$0	0	\$298,000	\$5,721,122	4.77%	\$10.58
62.0000	Mechanical	\$2,463,018	\$311,250	\$0	0	\$545,000	\$3,319,268	2.77%	\$6.14
63.0000	Electrical	\$5,326,752	\$2,222,947	\$0	0	\$16,200	\$7,565,899	6.30%	\$13.99
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	1.00%	\$2.21
65.0000	Chemical	\$16,000,000	\$0	\$0	0	\$0	\$16,000,000	13.33%	\$29.57
Subtotal Purchase Contracts:		\$29,678,322	\$2,694,767	\$0	0	\$1,429,200	\$33,802,289	28.16%	\$62.48
Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0203	Site Finishing	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,239,000	\$1,239,000	1.03%	\$2.29
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$530,877	\$1,803,491	31,149	\$128,332	\$2,462,700	2.05%	\$4.55
71.0403	Civil / Structural Construction- Superstructures	\$0	\$15,000	\$7,139,859	103,162	\$1,025,000	\$8,179,859	6.81%	\$15.12
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$12,006,670	195,329	\$2,799,250	\$14,805,920	12.34%	\$27.37
73.0000	Electrical / Control Construction	\$0	\$182,000	\$4,598,787	73,604	\$10,800	\$4,791,587	3.99%	\$8.86
78.0000	Service Contracts & Construction Indirects	\$0	\$2,975,906	\$3,201,221	68,857	\$11,065,906	\$17,243,033	14.37%	\$31.87
Subtotal Construction Contracts:		\$0	\$3,703,783	\$28,750,028	472,102	\$16,268,288	\$48,722,099	40.59%	\$90.06
Total Direct Costs		\$29,678,322	\$6,398,550	\$28,750,028	472,102	\$17,697,488	\$82,524,388	68.75%	\$152.54
Indirect Costs:									
99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	5.10%	\$11.30
99.1200	Construction Management (With G&A)	\$0	\$57,051	\$4,663,921	102,575	\$6,599,631	\$11,320,603	9.43%	\$20.93
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,370,908	\$1,370,908	1.14%	\$2.53
99.1600	Performance Bond	\$0	\$0	\$0	0	\$587,532	\$587,532	0.49%	\$1.09
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$58,683	\$0	0	\$0	\$58,683	0.05%	\$0.11
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$10,197,768	\$10,197,768	8.50%	\$18.85
99.2600	EPC profit	\$0	\$0	\$0	0	\$7,852,000	\$7,852,000	6.54%	\$14.51
Total Indirect Costs		\$0	\$115,734	\$7,123,921	162,575	\$30,263,399	\$37,503,054	31.25%	\$69.32
Total Overnight (April 2011) EPC Capital Costs:		\$29,678,322	\$6,514,284	\$35,873,949	634,676	\$47,960,887	\$120,027,443	100.00%	\$221.86

LG&E - KU- Ghent Unit 1 PJFF Rev.B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-11

LOCATION: Carroll County, KY
 PLANT TYPE: PC Fired Boiler
 CLIENT: LG&E - KU
 PARTNER: N/A
 CURRENCY: US Dollars

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 541	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Purchase Contracts:									
61.0300	Grating	\$0	\$24,400	\$0	0	\$0	\$24,400	0.02%	\$0.05
61.0810	Embeds and Anchor Bolts	\$0	\$37,170	\$0	0	\$0	\$37,170	0.03%	\$0.07
61.3601	Chain Link Fence	\$0	\$0	\$0	0	\$10,000	\$10,000	0.01%	\$0.02
61.3801	Ductwork and Breeching	\$1,134,400	\$0	\$0	0	\$0	\$1,134,400	0.95%	\$2.10
61.4001	Structural Steel	\$4,128,152	\$0	\$0	0	\$0	\$4,128,152	3.44%	\$7.63
61.4015	Handrail and stairs	\$0	\$99,000	\$0	0	\$0	\$99,000	0.08%	\$0.18
Subtotal - Civil / Structural Purchase Contracts:		\$5,262,552	\$160,570	\$0	0	\$298,000	\$5,721,122	4.77%	\$10.58
Mechanical Purchase Contracts:									
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.09
67.0414	Fly Ash Tranfer System	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.21%	\$0.46
67.9532	ID Booster Fans	\$1,910,000	\$0	\$0	0	\$0	\$1,910,000	1.59%	\$3.53
66.1000	Piping and Tubing	\$303,018	\$0	\$0	0	\$495,000	\$798,018	0.66%	\$1.48
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.19%	\$0.43
66.2070	Piping supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.07%	\$0.15
Subtotal - Mechanical Purchase Contracts:		\$2,463,018	\$311,250	\$0	\$0	\$545,000	\$3,319,268	2.77%	\$6.14
Electrical Purchase Contracts:									
63.0000	Electrical Equipment & Materials	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
63.0500	Lightning Protection Equipment and Materials	\$0	\$1,400	\$0	0	\$0	\$1,400	0.00%	\$0.00
63.0601	Plant Communication System	\$0	\$2,220	\$0	0	\$0	\$2,220	0.00%	\$0.00
63.0601	Plant Communication System	\$0	\$300,000	\$0	0	\$0	\$300,000	0.25%	\$0.55
63.0802	Cable and Raceway	\$0	\$500,000	\$0	0	\$0	\$500,000	0.42%	\$0.92
63.1001	Welding System	\$0	\$7,500	\$0	0	\$0	\$7,500	0.01%	\$0.01
63.1201	Iso-Phase Bus Duct	\$230,000	\$0	\$0	0	\$0	\$230,000	0.19%	\$0.43
63.1202	Cable Bus	\$0	\$1,160,452	\$0	0	\$16,200	\$1,176,652	0.98%	\$2.17
63.2000	Metering & Relaying	\$60,000	\$0	\$0	0	\$0	\$60,000	0.05%	\$0.11
63.2800	UPS System	\$0	\$221,375	\$0	0	\$0	\$221,375	0.18%	\$0.41
63.2805	PanelBoards	\$0	\$30,000	\$0	0	\$0	\$30,000	0.02%	\$0.06
63.3002	VFDs, Motors and couplings	\$2,778,000	\$0	\$0	0	\$0	\$2,778,000	2.31%	\$5.13
63.3603	Low Voltage Switchgear	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.33%	\$2.96
63.3802	SUS Transformers	\$239,752	\$0	\$0	0	\$0	\$239,752	0.20%	\$0.44
63.3803	Aux. - Misc. Transformers	\$417,000	\$0	\$0	0	\$0	\$417,000	0.35%	\$0.77
63.5010	Grounding Materials and Equipment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
Subtotal - Electrical Purchase Contracts:		\$5,326,752	\$2,222,947	\$0	0	\$16,200	\$7,565,899	6.30%	\$13.99
Control Purchase Contracts:									
64.0202	DCS / PLC mods	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
64.0202	DCS / PLC mods	\$576,000	\$0	\$0	0	\$0	\$576,000	0.48%	\$1.06
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.47%	\$1.05
64.1003	Instrumentation	\$50,000	\$0	\$0	0	\$0	\$50,000	0.04%	\$0.09
Subtotal - Control Purchase Contracts:		\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	1.00%	\$2.21
Chemical Purchase Contracts:									
65.3120	Fabric Filter	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	12.50%	\$27.73
65.3500	H - PAC Injection system	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.83%	\$1.85
Subtotal - Chemical Purchase Contracts:		\$16,000,000	\$0	\$0	0	\$0	\$16,000,000	13.33%	\$29.57
Subtotal Purchase Contracts:		\$29,678,322	\$2,694,767	\$0	0	\$1,429,200	\$33,802,289	28.16%	\$62.48

LG&E - KU- Ghent Unit 1 PJFF Rev.B

B&V PROJECT #: 168908
 PROJECT ESTIMATOR: Ron Fields
 PROJECT MANAGER: Tim Hillman
 PURPOSE OF ESTIMATE: Budgetary
 ESTIMATE DATE: April-11

LOCATION: Carroll County, KY
 PLANT TYPE: PC Fired Boiler
 CLIENT: LG&E - KU
 PARTNER: N/A
 CURRENCY: US Dollars

BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 541	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,239,000	\$1,239,000	1.03%	\$2.29
71.0402	General Construction - Substructures	\$0	\$530,877	\$1,803,491	31,149	\$128,332	\$2,462,700	2.05%	\$4.55
71.0403	General Construction - Superstructures	\$0	\$15,000	\$7,139,859	103,162	\$1,025,000	\$8,179,859	6.81%	\$15.12
Subtotal - Civil / Structural Construction Contracts:		\$0	\$545,877	\$8,943,350	134,311	\$2,392,332	\$11,881,559	9.90%	\$21.96
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$2,088,825	33,140	\$0	\$2,088,825	1.74%	\$3.86
72.0403	Piping & Equipment Insulation	\$0	\$0	\$0	0	\$2,006,000	\$2,006,000	1.67%	\$3.71
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$793,250	\$793,250	0.66%	\$1.47
75.3200	Mechanical - Scrubber Refurbishment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
77.0000	Mechanical Construction	\$0	\$0	\$9,917,845	162,189	\$0	\$9,917,845	8.26%	\$18.33
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$12,006,670	\$195,329	\$2,799,250	\$14,805,920	12.34%	\$27.37
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$182,000	\$4,355,865	69,716	\$10,800	\$4,548,665	3.79%	\$8.41
74.0201	Control & Instrumentation Installation	\$0	\$0	\$242,922	3,888	\$0	\$242,922	0.20%	\$0.45
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$4,598,787	73,604	\$10,800	\$4,791,587	3.99%	\$8.86
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$2,975,906	\$3,201,221	68,857	\$10,865,306	\$17,042,433	14.20%	\$31.50
78.4000	Warranty	\$0	\$0	\$0	0	\$200,600	\$200,600	0.17%	\$0.37
Subtotal - Construction Indirects & Service Contracts:		\$0	\$2,975,906	\$3,201,221	68,857	\$11,065,906	\$17,243,033	14.37%	\$31.87
Subtotal - Construction Costs:		\$0	\$3,703,783	\$28,750,028	472,102	\$16,268,288	\$48,722,099	40.59%	\$90.06
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99.2600	EPC profit	\$0	\$0	\$0	0	\$7,852,000	\$7,852,000	6.54%	\$14.51
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