

LG&E - KU- Ghent Unit 3 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 523
		Engr Equip	Commodities					
		Material \$	Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$2,431,204	\$298,100	\$1,096,286	15,840	\$100,000	\$3,925,590	2.77%	\$7.51
61.3801	Ductwork and breeching	\$3,102,400	\$0	\$0	0	\$0	\$3,102,400	2.19%	\$5.93
62.0000	Mechanical - Balance of Plant - (BOP)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.10
63.0000	Electrical - (BOP) Equipment and raceway	\$490,000	\$1,062,495	\$0	0	\$0	\$1,552,495	1.10%	\$2.97
63.3002	VFDs, Motors and Couplings	\$7,948,000	\$0	\$0	0	\$0	\$7,948,000	5.62%	\$15.20
63.1202	Cable Bus	\$0	\$327,912	\$0	0	\$16,200	\$344,112	0.24%	\$0.66
63.3603	Switchgear and MCCs	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.13%	\$3.06
63.3802	SUS Transformers	\$256,000	\$0	\$0	0	\$0	\$256,000	0.18%	\$0.49
63.3803	Aux Transformers	\$985,000	\$0	\$0	0	\$0	\$985,000	0.70%	\$1.88
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.44%	\$1.20
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.40%	\$1.09
65.3210	Remote Sorbent Injection Equipment	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.10
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	10.60%	\$28.68
65.3500	H-PAC Mercury Control	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.71%	\$1.91
66.1000	Piping & Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.22%	\$0.60
66.2070	Pipe Supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.06%	\$0.15
67.0414	Fly Ash Transfer System	\$0	\$0	\$0	0	\$2,300,000	\$2,300,000	1.63%	\$4.40
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.16%	\$0.44
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.18%	\$0.48
67.9532	ID Fans	\$3,860,000	\$0	\$0	0	\$0	\$3,860,000	2.73%	\$7.38
Subtotal Purchase Contracts:		\$37,865,622	\$1,999,757	\$1,096,286	15,840	\$3,086,200	\$44,047,866	31.13%	\$84.22

Construction Contracts:

71.0100	Demolition works	\$0	\$0	\$0	\$0	\$400,000	\$400,000	0.28%	\$0.76
71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	\$0	\$2,415,000	\$2,415,000	1.71%	\$4.62
71.0403	Civil / Structural Construction - Super Structures	\$0	\$879,896	\$2,852,813	\$49,551	\$127,043	\$3,859,752	2.73%	\$7.38
71.0402	Civil / Structural Construction - Sub-Structures	\$0	\$15,000	\$4,255,354	\$61,485	\$4,280,000	\$8,550,354	6.04%	\$16.35
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$14,283,571	232,519	\$3,420,250	\$17,703,821	12.51%	\$33.85
73.0000	Electrical / Control Construction	\$0	\$182,000	\$4,055,961	64,916	\$10,800	\$4,248,761	3.00%	\$8.12
77.5450	Field Erected Frac Tank	\$0	\$0	\$0	0	\$417,555	\$417,555	0.30%	\$0.80
78.0000	Service Contracts & Construction Indirects	\$0	\$3,131,673	\$3,368,782	72,461	\$11,542,492	\$18,042,947	12.75%	\$34.50
Subtotal Construction Contracts:		\$0	\$4,208,569	\$28,816,481	480,932	\$22,613,140	\$55,638,189	39.32%	\$106.38

Total Direct Costs

\$37,865,622	\$6,208,326	\$29,912,767	496,772	\$25,699,340	\$99,686,055	70.45%	\$190.60
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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	4.32%	\$11.69
99.1200	EPC Construction Management (Includes G&A)	\$0	\$60,038	\$4,908,044	107,944	\$6,945,075	\$11,913,157	8.42%	\$22.78
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,714,505	\$1,714,505	1.21%	\$3.28
99.1600	Performance Bond	\$0	\$0	\$0	0	\$734,788	\$734,788	0.52%	\$1.40
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$61,755	\$0	0	\$0	\$61,755	0.04%	\$0.12
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$12,022,582	\$12,022,582	8.50%	\$22.99
99.2600	EPC Profit	\$0	\$0	\$0	0	\$9,257,000	\$9,257,000	6.54%	\$17.70
Total Indirect Costs		\$0	\$121,792	\$7,368,044	167,944	\$34,329,510	\$41,819,347	28.63%	\$79.96

Total Overnight (April 2011) EPC Capital Costs:

\$37,865,622	\$6,330,118	\$37,280,811	664,716	\$60,028,850	\$141,505,402	100.00%	\$270.56
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

LG&E - KU- Ghent Unit 3 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 523
		Engr Equip	Commodities	Labor \$	Manhours	Other		
		Material \$	Material \$					

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$5,533,604	\$298,100	\$1,096,286	15,840	\$100,000	\$7,027,990	4.97%	\$13.44
62.0000	Mechanical	\$4,425,018	\$311,250	\$0	0	\$2,350,000	\$7,086,268	5.01%	\$13.55
63.0000	Electrical	\$11,281,000	\$1,390,407	\$0	0	\$16,200	\$12,687,607	8.97%	\$24.26
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.85%	\$2.29
65.0000	Chemical	\$16,000,000	\$0	\$0	0	\$50,000	\$16,050,000	11.34%	\$30.69

Subtotal Purchase Contracts:

\$37,865,622 \$1,999,757 \$1,096,286 15,840 \$3,086,200 \$44,047,866 31.13% \$84.22

Construction Contracts:

71.0100	Demolition Works	\$0	\$0	\$0	0	\$400,000	\$400,000	0.28%	\$0.76
71.0203	Site Finishing	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$2,415,000	\$2,415,000	1.71%	\$4.62
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$879,896	\$2,852,813	49,551	\$127,043	\$3,859,752	2.73%	\$7.38
71.0403	Civil / Structural Construction- Superstructures	\$0	\$15,000	\$4,255,354	61,485	\$4,280,000	\$8,550,354	6.04%	\$16.35
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$14,283,571	232,519	\$3,837,805	\$18,121,376	12.81%	\$34.65
73.0000	Electrical / Control Construction	\$0	\$182,000	\$4,055,961	64,916	\$10,800	\$4,248,761	3.00%	\$8.12
78.0000	Service Contracts & Construction Indirects	\$0	\$3,131,673	\$3,368,782	72,461	\$11,542,492	\$18,042,947	12.75%	\$34.50

Subtotal Construction Contracts:

\$0 \$4,208,569 \$28,816,481 480,932 \$22,613,140 \$55,638,189 39.32% \$106.38

Total Direct Costs

\$37,865,622 \$6,208,326 \$29,912,767 496,772 \$25,699,340 \$99,686,055 70.45% \$190.60

Indirect Costs:

99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,460,000	60,000	\$3,655,560	\$6,115,560	4.32%	\$11.69
99.1200	Construction Management (With G&A)	\$0	\$60,038	\$4,908,044	107,944	\$6,945,075	\$11,913,157	8.42%	\$22.78
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,714,505	\$1,714,505	1.21%	\$3.28
99.1600	Performance Bond	\$0	\$0	\$0	0	\$734,788	\$734,788	0.52%	\$1.40
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$61,755	\$0	0	\$0	\$61,755	0.04%	\$0.12
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$12,022,582	\$12,022,582	8.50%	\$22.99
99.2600	EPC profit	\$0	\$0	\$0	0	\$9,257,000	\$9,257,000	6.54%	\$17.70

Total Indirect Costs

\$0 \$121,792 \$7,368,044 167,944 \$34,329,510 \$41,819,347 29.55% \$79.96

Total Overnight (April 2011) EPC Capital Costs:

\$37,865,622 \$6,330,118 \$37,280,811 664,716 \$60,028,850 \$141,505,402 100.00% \$270.56

LG&E - KU- Ghent Unit 3 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 523	
		Engr Equip	Commodities	Labor \$	Manhours	Other			TOTAL \$
		Material \$	Material \$						
Civil / Structural Purchase Contracts:									
61.0300	Grating	\$0	\$3,520	\$0	0	\$0	\$3,520	0.00%	\$0.01
61.0810	Embeds and Anchor Bolts	\$0	\$54,390	\$0	0	\$0	\$54,390	0.04%	\$0.10
61.3601	Chain Link Fence	\$0	\$25,000	\$0	0	\$100,000	\$125,000	0.09%	\$0.24
61.3801	Ductwork and Breeching	\$3,102,400	\$0	\$0	0	\$0	\$3,102,400	2.19%	\$5.93
61.4001	Structural Steel	\$2,431,204	\$0	\$0	0	\$0	\$2,431,204	1.72%	\$4.65
61.4015	Handrail and stairs	\$0	\$36,990	\$0	0	\$0	\$36,990	0.03%	\$0.07
Subtotal - Civil / Structural Purchase Contracts:		\$5,533,604	\$298,100	\$1,096,286	15,840	\$100,000	\$7,027,990	4.97%	\$13.44
Mechanical Purchase Contracts:									
62.0205	Continuous Emissions Monitoring (CEM)	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.10
67.0414	Fly Ash Tranfer System	\$0	\$0	\$0	0	\$2,300,000	\$2,300,000	1.63%	\$4.40
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.18%	\$0.48
67.9532	ID Booster Fans	\$3,860,000	\$0	\$0	0	\$0	\$3,860,000	2.73%	\$7.38
66.1000	Piping and Tubing	\$315,018	\$0	\$0	0	\$0	\$315,018	0.22%	\$0.60
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.16%	\$0.44
66.2070	Piping supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.06%	\$0.15
Subtotal - Mechanical Purchase Contracts:		\$4,425,018	\$311,250	\$0	\$0	\$2,350,000	\$7,086,268	5.01%	\$13.55
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	0.21%	\$0.57
63.0802	Cable and Raceway	\$0	\$500,000	\$0	0	\$0	\$500,000	0.35%	\$0.96
63.1001	Welding System	\$0	\$7,500	\$0	0	\$0	\$7,500	0.01%	\$0.01
63.1201	Iso-Phase Bus Duct	\$430,000	\$0	\$0	0	\$0	\$430,000	0.30%	\$0.82
63.1202	Cable Bus	\$0	\$327,912	\$0	0	\$16,200	\$344,112	0.24%	\$0.66
63.2000	Metering & Relaying	\$60,000	\$0	\$0	0	\$0	\$60,000	0.04%	\$0.11
63.2800	UPS System	\$0	\$221,375	\$0	0	\$0	\$221,375	0.16%	\$0.42
63.2805	PanelBoards	\$0	\$30,000	\$0	0	\$0	\$30,000	0.02%	\$0.06
63.3002	VFDs, Motors and couplings	\$7,948,000	\$0	\$0	0	\$0	\$7,948,000	5.62%	\$15.20
63.3603	Low Voltage Switchgear	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.13%	\$3.06
63.3802	SUS Transformers	\$256,000	\$0	\$0	0	\$0	\$256,000	0.18%	\$0.49
63.3803	Aux. - Misc. Transformers	\$985,000	\$0	\$0	0	\$0	\$985,000	0.70%	\$1.88
63.5010	Grounding Materials and Equipment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
Subtotal - Electrical Purchase Contracts:		\$11,281,000	\$1,390,407	\$0	0	\$16,200	\$12,687,607	8.97%	\$24.26
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	0.41%	\$1.10
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.40%	\$1.09
64.1003	Instrumentation	\$50,000	\$0	\$0	0	\$0	\$50,000	0.04%	\$0.10
Subtotal - Control Purchase Contracts:		\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.85%	\$2.29
Chemical Purchase Contracts:									
65.3210	Remote Sorbent Injection Equipment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3210	Remote Sorbent Injection Equipment	\$0	\$0	\$0	0	\$50,000	\$50,000	0.04%	\$0.10
65.3120	Fabric Filter	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	10.60%	\$28.68
65.3500	H - PAC Injection system	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.71%	\$1.91
Subtotal - Chemical Purchase Contracts:		\$16,000,000	\$0	\$0	0	\$50,000	\$16,050,000	11.34%	\$30.69
Subtotal Purchase Contracts:		\$37,865,622	\$1,999,757	\$1,096,286	15,840	\$3,086,200	\$44,047,866	31.13%	\$84.22

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BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 523	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$400,000	0.28%	\$0.76
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$2,415,000	\$2,415,000	1.71%	\$4.62
71.0402	General Construction - Substructures	\$0	\$879,896	\$2,852,813	49,551	\$127,043	\$3,859,752	2.73%	\$7.38
71.0403	General Construction - Superstructures	\$0	\$15,000	\$4,255,354	61,485	\$4,280,000	\$8,550,354	6.04%	\$16.35
Subtotal - Civil / Structural Construction Contracts:		\$0	\$894,896	\$7,108,167	111,035	\$7,222,043	\$15,225,106	10.76%	\$29.11
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$0	0	\$0	\$2,179,588	1.54%	\$4.17
72.0403	Piping & Equipment Insulation	\$0	\$0	\$2,179,588	34,580	\$0	\$2,006,000	1.42%	\$3.84
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$1,414,250	\$1,414,250	1.00%	\$2.70
77.0000	Mechanical Construction	\$0	\$0	\$12,103,982	197,939	\$0	\$12,103,982	8.55%	\$23.14
77.5450	Field Erected Tanks	\$0	\$0	\$0	0	\$417,555	\$417,555	0.30%	\$0.80
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$14,283,571	\$232,519	\$3,837,805	\$18,121,376	12.81%	\$34.65
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$0	\$0	0	\$0	\$4,005,838	2.83%	\$7.66
74.0201	Control & Instrumentation Installation	\$0	\$182,000	\$3,813,038	61,028	\$10,800	\$4,005,838	2.83%	\$7.66
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$4,055,961	64,916	\$10,800	\$4,248,761	3.00%	\$8.12
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$0	\$0	0	\$0	\$17,831,847	12.60%	\$34.10
78.4000	Warranty	\$0	\$3,131,673	\$3,368,782	72,461	\$11,331,392	\$17,831,847	12.60%	\$34.10
Subtotal - Construction Indirects & Service Contracts:		\$0	\$3,131,673	\$3,368,782	72,461	\$11,542,492	\$18,042,947	12.75%	\$34.50
Subtotal - Construction Costs:		\$0	\$4,208,569	\$28,816,481	480,932	\$22,613,140	\$55,638,189	39.32%	\$106.38
Subtotal - Direct Costs:		\$37,865,622	\$6,208,326	\$29,912,767	496,772	\$25,699,340	\$99,686,055	70.45%	\$190.60
Indirect Costs:									
99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$0	0	\$0	\$6,115,560	4.32%	\$11.69
99.1200	EPC Construction Management (Includes G&A)	\$0	\$60,038	\$4,908,044	107,944	\$6,945,075	\$11,913,157	8.42%	\$22.78
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,714,505	\$1,714,505	1.21%	\$3.28
99.1600	Performance Bond	\$0	\$0	\$0	0	\$734,788	\$734,788	0.52%	\$1.40
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$61,755	\$0	0	\$0	\$61,755	0.04%	\$0.12
99.2500	Project Contingency	\$0	\$0	\$0	0	\$12,022,582	\$12,022,582	8.50%	\$22.99
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