

LG&E - KU- Ghent Unit 4 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 526
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$1,210,700	\$92,570	\$0	0	\$100,000	\$1,403,270	1.09%	\$2.67
61.3801	Ductwork and breaching	\$3,272,100	\$0	\$0	0	\$0	\$3,272,100	2.54%	\$6.22
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	\$290,000	\$1,062,495	\$0	0	\$0	\$1,352,495	1.05%	\$2.57
63.3002	VFDs, Motors and Couplings	\$7,948,000	\$0	\$0	0	\$0	\$7,948,000	6.16%	\$15.11
63.1202	Cable Bus	\$0	\$1,552,412	\$0	0	\$16,200	\$1,568,612	1.22%	\$2.98
63.3603	Switchgear and MCCs	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.24%	\$3.05
63.3802	SUS Transformers	\$256,000	\$0	\$0	0	\$0	\$256,000	0.20%	\$0.49
63.3803	Aux Transformers	\$985,000	\$0	\$0	0	\$0	\$985,000	0.76%	\$1.87
64.0000	Control - DCS, Instrumentation	\$626,000	\$0	\$0	0	\$0	\$626,000	0.49%	\$1.19
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.44%	\$1.08
65.3120	Fabric Filter	\$14,000,000	\$0	\$0	0	\$0	\$14,000,000	10.85%	\$26.62
65.3500	H-PAC Mercury Control	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.78%	\$1.90
66.1000	Piping & Tubing	\$364,518	\$0	\$0	0	\$495,000	\$859,518	0.67%	\$1.63
66.2070	Pipe Supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.06%	\$0.15
66.3000	Valves and Accessories	\$0	\$232,000	\$0	0	\$0	\$232,000	0.18%	\$0.44
67.9300	Air Compressors, Dryers, & Air Receivers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.19%	\$0.48
67.9532	ID Fans	\$3,860,000	\$0	\$0	0	\$0	\$3,860,000	2.99%	\$7.34
Subtotal Purchase Contracts:		\$35,664,318	\$3,018,727	\$0	0	\$1,231,200	\$39,914,245	30.94%	\$75.88

Construction Contracts:

71.0100	Demolition works	\$0	\$0	\$32,838	\$640	\$250,000	\$282,838	0.22%	\$0.54
71.0401	Civil / Structural Construction - Cast In place Piling	\$0	\$0	\$0	\$0	\$1,883,000	\$1,883,000	1.46%	\$3.58
71.0403	Civil / Structural Construction - Super Structures	\$0	\$705,021	\$2,613,517	\$45,628	\$255,443	\$3,573,981	2.77%	\$6.79
71.0402	Civil / Structural Construction - Sub-Structures	\$0	\$115,000	\$1,983,835	\$28,664	\$1,825,000	\$3,923,835	3.04%	\$7.46
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$14,528,382	236,454	\$2,595,100	\$17,123,482	13.28%	\$32.55
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,581,472	89,332	\$10,800	\$5,774,272	4.48%	\$10.98
78.0000	Service Contracts & Construction Indirects	\$0	\$2,952,170	\$3,175,688	68,308	\$10,796,149	\$16,924,006	13.12%	\$32.17
Subtotal Construction Contracts:		\$0	\$3,954,191	\$27,915,734	469,026	\$17,615,492	\$49,485,416	38.36%	\$94.08

Total Direct Costs

\$35,664,318	\$6,972,918	\$27,915,734	469,026	\$18,846,692	\$89,399,662	69.31%	\$169.96
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Indirect Costs:

99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$2,706,000	66,000	\$4,021,116	\$6,727,116	5.22%	\$12.79
99.1200	EPC Construction Management (Includes G&A)	\$0	\$56,596	\$4,626,721	101,756	\$6,546,992	\$11,230,309	8.71%	\$21.35
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,521,989	\$1,521,989	1.18%	\$2.89
99.1600	Performance Bond	\$0	\$0	\$0	0	\$652,281	\$652,281	0.51%	\$1.24
99.1900	Sales Tax 6% of Indirect materials and services	\$0	\$58,215	\$0	0	\$0	\$58,215	0.05%	\$0.11
99.2500	Project Contingency 10 %	\$0	\$0	\$0	0	\$10,958,957	\$10,958,957	8.50%	\$20.83
99.2600	EPC Profit	\$0	\$0	\$0	0	\$8,438,000	\$8,438,000	6.54%	\$16.04

Total Indirect Costs

\$0	\$114,811	\$7,332,721	167,756	\$32,139,335	\$39,586,867	28.63%	\$75.26
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Total Overnight (April 2011) EPC Capital Costs:

\$35,664,318	\$7,087,729	\$35,248,455	636,782	\$50,986,027	\$128,986,529	100.00%	\$245.22
\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00

LG&E - KU- Ghent Unit 4 PJFF Rev. B

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 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 526
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other		

ESTIMATE SUMMARY

Purchase Contracts:

61.0000	Civil / Structural	\$4,482,800	\$92,570	\$0	0	\$100,000	\$4,675,370	3.62%	\$8.89
62.0000	Mechanical	\$4,474,518	\$311,250	\$0	0	\$545,000	\$5,330,768	4.13%	\$10.13
63.0000	Electrical	\$11,081,000	\$2,614,907	\$0	0	\$16,200	\$13,712,107	10.63%	\$26.07
64.0000	Control	\$626,000	\$0	\$0	0	\$570,000	\$1,196,000	0.93%	\$2.27
65.0000	Chemical	\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	11.63%	\$28.52
Subtotal Purchase Contracts:		\$35,664,318	\$3,018,727	\$0	0	\$1,231,200	\$39,914,245	30.94%	\$75.88

Construction Contracts:

71.0100	Demolition Works	\$0	\$0	\$32,838	640	\$250,000	\$282,838	0.22%	\$0.54
71.0203	Site Finishing	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
71.0401	Cast In place Piling	\$0	\$0	\$0	0	\$1,883,000	\$1,883,000	1.46%	\$3.58
71.0402	Civil / Structural Construction -Substrucutres	\$0	\$705,021	\$2,613,517	45,628	\$255,443	\$3,573,981	2.77%	\$6.79
71.0403	Civil / Structural Construction- Superstructures	\$0	\$115,000	\$1,983,835	28,664	\$1,825,000	\$3,923,835	3.04%	\$7.46
72.0000	Mechanical / Chemical Construction	\$0	\$0	\$14,528,382	236,454	\$2,595,100	\$17,123,482	13.28%	\$32.55
73.0000	Electrical / Control Construction	\$0	\$182,000	\$5,581,472	89,332	\$10,800	\$5,774,272	4.48%	\$10.98
78.0000	Service Contracts & Construction Indirects	\$0	\$2,952,170	\$3,175,688	68,308	\$10,796,149	\$16,924,006	13.12%	\$32.17
Subtotal Construction Contracts:		\$0	\$3,954,191	\$27,915,734	469,026	\$17,615,492	\$49,485,416	38.36%	\$94.08

Total Direct Costs

\$35,664,318	\$6,972,918	\$27,915,734	469,026	\$18,846,692	\$89,399,662	69.31%	\$169.96
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Indirect Costs:

99.1100	Engineering Costs (With G&A)	\$0	\$0	\$2,706,000	66,000	\$4,021,116	\$6,727,116	5.22%	\$12.79
99.1200	Construction Management (With G&A)	\$0	\$56,596	\$4,626,721	101,756	\$6,546,992	\$11,230,309	8.71%	\$21.35
99.1500	Project Insurance	\$0	\$0	\$0	0	\$1,521,989	\$1,521,989	1.18%	\$2.89
99.1600	Performance Bond	\$0	\$0	\$0	0	\$652,281	\$652,281	0.51%	\$1.24
99.1900	Sale Tax 6% of Indirect materials and services	\$0	\$58,215	\$0	0	\$0	\$58,215	0.05%	\$0.11
99.2500	Project Contingency @ 10%	\$0	\$0	\$0	0	\$10,958,957	\$10,958,957	8.50%	\$20.83
99.2600	EPC profit	\$0	\$0	\$0	0	\$8,438,000	\$8,438,000	6.54%	\$16.04
Total Indirect Costs		\$0	\$114,811	\$7,332,721	167,756	\$32,139,335	\$39,586,867	30.69%	\$75.26

Total Overnight (April 2011) EPC Capital Costs:

\$35,664,318	\$7,087,729	\$35,248,455	636,782	\$50,986,027	\$128,986,529	100.00%	\$245.22
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LG&E - KU- Ghent Unit 4 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 526	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Purchase Contracts:									
61.0300	Grating	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
61.0810	Embeds and Anchor Bolts	\$0	\$87,570	\$0	0	\$0	\$87,570	0.07%	\$0.17
61.3601	Chain Link Fence	\$0	\$5,000	\$0	0	\$100,000	\$105,000	0.08%	\$0.20
61.3801	Ductwork and Breeching	\$3,272,100	\$0	\$0	0	\$0	\$3,272,100	2.54%	\$6.22
61.4001	Structural Steel	\$1,210,700	\$0	\$0	0	\$0	\$1,210,700	0.94%	\$2.30
61.4015	Handrail and stairs	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
Subtotal - Civil / Structural Purchase Contracts:		\$4,482,800	\$92,570	\$0	0	\$100,000	\$4,675,370	3.62%	\$8.89
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	\$0	\$0	0.00%	\$0.00
67.9300	Compressors and Air Dryers	\$250,000	\$0	\$0	0	\$0	\$250,000	0.19%	\$0.48
67.9532	ID Booster Fans	\$3,860,000	\$0	\$0	0	\$0	\$3,860,000	2.99%	\$7.34
66.1000	Piping and Tubing	\$364,518	\$0	\$0	0	\$495,000	\$859,518	0.67%	\$1.63
66.3000	Valves	\$0	\$232,000	\$0	0	\$0	\$232,000	0.18%	\$0.44
66.2070	Piping supports	\$0	\$79,250	\$0	0	\$0	\$79,250	0.06%	\$0.15
Subtotal - Mechanical Purchase Contracts:		\$4,474,518	\$311,250	\$0	\$0	\$545,000	\$5,330,768	4.13%	\$10.13
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	0.23%	\$0.57
63.0802	Cable and Raceway	\$0	\$500,000	\$0	0	\$0	\$500,000	0.39%	\$0.95
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	0.18%	\$0.44
63.1202	Cable Bus	\$0	\$1,552,412	\$0	0	\$16,200	\$1,568,612	1.22%	\$2.98
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	0.17%	\$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	6.16%	\$15.11
63.3603	Low Voltage Switchgear	\$1,602,000	\$0	\$0	0	\$0	\$1,602,000	1.24%	\$3.05
63.3802	SUS Transformers	\$256,000	\$0	\$0	0	\$0	\$256,000	0.20%	\$0.49
63.3803	Aux. - Misc. Transformers	\$985,000	\$0	\$0	0	\$0	\$985,000	0.76%	\$1.87
63.5010	Grounding Materials and Equipment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
Subtotal - Electrical Purchase Contracts:		\$11,081,000	\$2,614,907	\$0	0	\$16,200	\$13,712,107	10.63%	\$26.07
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	0.45%	\$1.10
64.0407	On-line Performance Monitoring - Neural Network	\$0	\$0	\$0	0	\$570,000	\$570,000	0.44%	\$1.08
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	0.93%	\$2.27
Chemical Purchase Contracts:									
65.3210	Sorbent Injection	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
65.3120	Fabric Filter	\$14,000,000	\$0	\$0	0	\$0	\$14,000,000	10.85%	\$26.62
65.3500	H - PAC Injection system	\$1,000,000	\$0	\$0	0	\$0	\$1,000,000	0.78%	\$1.90
Subtotal - Chemical Purchase Contracts:		\$15,000,000	\$0	\$0	0	\$0	\$15,000,000	11.63%	\$28.52
Subtotal Purchase Contracts:		\$35,664,318	\$3,018,727	\$0	0	\$1,231,200	\$39,914,245	30.94%	\$75.88

LG&E - KU- Ghent Unit 4 PJFF Rev. B

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 PROJECT ESTIMATOR: Ron Fields
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 PURPOSE OF ESTIMATE: Budgetary
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LOCATION: Carroll County, KY
 PLANT TYPE: PC Fired Boiler
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BLACK AND VEATCH CONFIDENTIAL AND PROPRIETARY INFORMATION

Contract Number	Description	PROJECT - TOTAL COSTS					% OF TOTAL C.V.	\$ PER KW 526	
		Engr Equip Material \$	Commodities Material \$	Labor \$	Manhours	Other			TOTAL \$
Civil / Structural Construction Contracts:									
71.0100	Demolition Works	\$0	\$0	\$0	0	\$0	\$282,838	0.22%	\$0.54
71.0401	Cast In place Piling	\$0	\$0	\$32,838	640	\$250,000	\$1,883,000	1.46%	\$3.58
71.0402	General Construction - Substructures	\$0	\$705,021	\$2,613,517	45,628	\$255,443	\$3,573,981	2.77%	\$6.79
71.0403	General Construction - Superstructures	\$0	\$115,000	\$1,983,835	28,664	\$1,825,000	\$3,923,835	3.04%	\$7.46
Subtotal - Civil / Structural Construction Contracts:		\$0	\$820,021	\$4,630,191	74,932	\$4,213,443	\$9,663,655	7.49%	\$18.37
Mechanical Construction Contracts:									
72.0401	Plant Piping Installation	\$0	\$0	\$0	0	\$0	\$2,321,179	1.80%	\$4.41
72.0403	Piping & Equipment Insulation	\$0	\$0	\$2,321,179	36,827	\$0	\$2,006,000	1.56%	\$3.81
72.0800	Fire Protection & Detection Systems	\$0	\$0	\$0	0	\$589,100	\$589,100	0.46%	\$1.12
75.3200	Mechanical - Scrubber Refurbishment	\$0	\$0	\$0	0	\$0	\$0	0.00%	\$0.00
77.0000	Mechanical Construction	\$0	\$0	\$12,207,203	199,627	\$0	\$12,207,203	9.46%	\$23.21
Subtotal - Mechanical Construction Contracts:		\$0	\$0	\$14,528,382	\$236,454	\$2,595,100	\$17,123,482	13.28%	\$32.55
Electrical / Control Construction Contracts:									
73.0201	Electrical Equipment Erection	\$0	\$0	\$0	0	\$0	\$5,531,350	4.29%	\$10.52
74.0201	Control & Instrumentation Installation	\$0	\$182,000	\$5,338,550	85,444	\$10,800	\$242,922	0.19%	\$0.46
Subtotal - Electrical / Control Construction Contracts:		\$0	\$182,000	\$5,581,472	89,332	\$10,800	\$5,774,272	4.48%	\$10.98
Construction Indirects & Service Contracts:									
78.0000	Service Contracts & Construction Indirects	\$0	\$0	\$0	0	\$0	\$16,725,006	12.97%	\$31.80
78.4000	Warranty	\$0	\$2,952,170	\$3,175,688	68,308	\$10,597,149	\$199,000	0.15%	\$0.38
Subtotal - Construction Indirects & Service Contracts:		\$0	\$2,952,170	\$3,175,688	68,308	\$10,796,149	\$16,924,006	13.12%	\$32.17
Subtotal - Construction Costs:		\$0	\$3,954,191	\$27,915,734	469,026	\$17,615,492	\$49,485,416	38.36%	\$94.08
Subtotal - Direct Costs:		\$35,664,318	\$6,972,918	\$27,915,734	469,026	\$18,846,692	\$89,399,662	69.31%	\$169.96
Indirect Costs:									
99.1100	Engineering Costs (Includes G&A)	\$0	\$0	\$0	0	\$0	\$6,727,116	5.22%	\$12.79
99.1200	EPC Construction Management (Includes G&A)	\$0	\$0	\$2,706,000	66,000	\$4,021,116	\$11,230,309	8.71%	\$21.35
99.1500	Project Insurance	\$0	\$56,596	\$4,626,721	101,756	\$6,546,992	\$1,521,989	1.18%	\$2.89
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