

Ms. Elizabeth O'Donnell Executive Director Kentucky Public Service Commission 211 Sower Boulevard Frankfort, Kentucky 40602-0615

October 25, 2007

Kentucky Utilities Company State Regulation and Rates 220 West Main Street PO Box 32010 Louisville, Kentucky 40232 www.eon-us.com

Robert M. Conroy Manager - Rates T 502-627-3324 F 502-627-3213 robert.conroy@eon-us.com

Re: <u>The Application Of Kentucky Utilities Company For A Certificate Of Public Convenience And Necessity To Construct A Selective Catalytic Reduction System And Approval Of Its 2006 Compliance Plan For Recovery By Environmental Surcharge</u> - Case No. 2006-00206

Dear Ms. O'Donnell:

Enclosed please find an original and ten (10) copies of Kentucky Utilities Company's ("KU") Motion to reopen the above-reference proceeding for the sole and limited purpose of receiving into the record the document titled: Ghent 2 Selective Catalytic Reduction ("SCR") Analysis Update-Timing of Construction (October 2007) ("Analysis Update) and issuing an order amending KU's 2006 Environmental Surcharge Compliance Plan to remove Project 26 and approving the corresponding amendments to KU's monthly Environmental Surcharge Reporting Forms.

Also enclosed are an original and ten (10) copies of a Petition for Confidential Protection regarding certain information contained in the *Analysis Update*.

Should you have any questions concerning the enclosed, please do not hesitate to contact me.

Sincerely,

Robert M. Conroy

cc: Dennis Howard, II Michael L. Kurtz

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF KENTUCKY UTILITIES)
COMPANY FOR A CERTIFICATE OF PUBLIC)
CONVENIENCE AND NECESSITY TO) CASE NO. 2006-00206
CONSTRUCT A SELECTIVE CATALYTIC)
REDUCTION SYSTEM AND APPROVAL OF ITS)
2006 COMPLIANCE PLAN FOR RECOVERY BY)
ENVIRONMENTAL SURCHARGE)

MOTION

Kentucky Utilities Company ("KU") hereby moves the Public Service Commission ("Commission") to reopen this proceeding for the sole and limited purpose of receiving into the record the document titled: *Ghent 2 Selective Catalytic Reduction ("SCR") Analysis Update-Timing of Construction (October 2007)("Analysis Update")* and issuing an order amending KU's 2006 Environmental Surcharge Compliance Plan to remove Project No. 26 and approving the corresponding amendments to KU's monthly Environmental Surcharge Reporting Forms. In support of its Motion, KU states as follows:

1. In its Order of December 12, 2006 in this proceeding, the Commission granted KU a Certificate of Public Convenience and Necessity to construct a Selective Catalytic Reduction ("SCR") System at Ghent Unit 2 as needed to comply with environmental regulations, approved KU's 2006 Environmental Surcharge Compliance Plan, and approved KU's proposed monthly surcharge reporting formats. Project No. 26 in KU's 2006 Environmental Surcharge Compliance Plan is the construction, installation and operation of the SCR at Ghent Unit 2.

At a meeting with representatives of the Commission Staff and the Attorney General's office at the Commission's offices on October 18, 2007, KU announced its decision to delay the construction of the SCR at Ghent Unit 2, reviewed the results of the *Analysis Update* through a

PowerPoint presentation, and distributed a copy of the *Analysis Update*. The decision to delay the construction is based on a number of changes since KU identified the facility as a least-cost option in its *May 2006 NO_x Compliance Strategy for E.ON U.S. LLC*¹, including changes in capital costs and allowance price forecasts, the availability of early reduction NO_x emission allowances and increases in annual and seasonal NO_x allowance allocations. KU also advised that the Certificate of Public Convenience and Necessity issued to construct the SCR would lapse on December 21, 2007 as a result of its decision to delay the construction of the facility.

- 2. At the meeting, KU further advised that it will continue to evaluate the economics of the Ghent Unit 2 SCR on at least an annual basis and in the event that option was determined to be the least-cost option for compliance, apply for authority from the Commission to construct the facility and recover its costs through the environmental surcharge. KU indicated that it would comply with the applicable environmental regulations through the use of NO_x emission allowances including early reduction credits.²
- 3. A complete copy of the public version of the *Analysis Update* is tendered for filing with this motion and marked as Exhibit A.³
- 4. A complete copy of the PowerPoint presentation reviewed at the Commission's offices on October 18, 2007 is tendered for filing with this motion and marked as Exhibit B.
- 5. Project No. 26 in KU's 2006 Environmental Surcharge Compliance Plan is the construction, installation and operation of the SCR at Ghent Unit 2. Based on KU's decision to delay the construction of the SCR for Ghent Unit 2 and the corresponding lapse of the associated Certificate of Public Convenience and Necessity, Project No. 26 should be removed from KU's

² The cost of the purchase of NO_x allowances, either inter-company from LG&E or market, is recoverable as part of Project No. 22 in KU's 2004 Environmental Surcharge Compliance Plan.

¹ Exhibit JPM-2 to the testimony of Mr. John P. Malloy.

³ The complete version of the *Analysis Update* is being filed pursuant to a Petition for Confidential Treatment in this proceeding.

2006 Environmental Surcharge Compliance Plan and monthly reporting formats. The proposed revised monthly reporting formats, ES Form 2.10 and ES Form 2.50, are tendered with this motion and marked collectively as Exhibit C.

WHEREFORE, Kentucky Utilities Company moves the Commission to enter an order reopening this proceeding for the sole and limited purpose of receiving into the record the document titled: Ghent 2 Selective Catalytic Reduction ("SCR") Analysis Update-Timing of Construction (October 2007("Analysis Update"), amending KU's 2006 Environmental Surcharge Compliance Plan to remove Project No. 26, and approving the corresponding amendments to KU's monthly Environmental Surcharge Reporting Forms.

Dated: October 25, 2007 Re

Respectfully submitted,

Kendrick R. Riggs

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Counsel for Kentucky Utilities Company

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing Motion was served via U.S. mail, first-class, postage prepaid, this 25th day of October 2007, upon the following persons:

Dennis G. Howard II Assistant Attorney General Office of the Kentucky Attorney General Office of Rate Intervention 1024 Capital Center Drive, Suite 200 Frankfort, Kentucky 40601-8204 David F. Boehm Michael L. Kurtz Boehm, Kurtz & Lowry 36 East Seventh Street Suite 1510 Cincinnati, Ohio 45202

Counsel for Kentucky Utilities Company

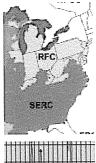
EXHIBIT A



Energy Marketing

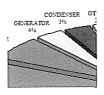
Market Analysis Economic Analysis Sales Analysis and Forecasting

Generation Planning





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	OMU	KU .	LGE		
MAINT	LOAD	LOAD	LOAD	GM	G
WEEK		(5==	11.21	468	4:
1/3	115	3,658	1,716		
1/10	115	3,123	1,745		
1/17	115	3,788	1,780		
1/24	115	3,842	1,805		
1731	115	3,815	1,792		
2/1	113	3,586	1,753	468	Г
2/14	113	3,561	1,741	468	_
2/21	113	3,536	1,728	468	



	2003	2062
ie Rim (steam)	3 716	19.7%
1 Creek	5 9%	10.3%
able Co. (steam)	3.3%	5 49 2
d:E (strace)	4.9%	11 414
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Ghent 2 Selective Catalytic Reduction ("SCR") Analysis Update – Timing of Construction

October 2007

Overview

This is an update of the Ghent 2 SCR analysis that is part of the Nitrogen Oxide ("NO_x") Compliance Strategy filed before the Kentucky Public Service Commission in Case No. 2006-00206 on June 23, 2006. The results of the May 2006 NO_x Compliance Strategy indicated that construction of the Ghent 2 SCR to be in-service in January 2009 was the 30-year least cost NO_x emission regulation compliance alternative. Construction of the Ghent 2 SCR in itself did not make the Companies self-compliant; and any remaining shortfall would likely be made up through market purchases of NO_x allowances. It was also recommended that Kentucky Utilities Company ("KU") and Louisville Gas & Electric Company ("LG&E") (collectively the "Companies") continue to monitor the emission allowance market in order to reduce their compliance costs.

Since May 2006, more information regarding NO_x regulations has become available and several of the key assumptions that supported the original analysis have changed, causing the Companies to re-evaluate the timing of the construction of the Ghent 2 SCR. They are:

- SCR construction cost estimates have increased;
- NO_x allowance market price forecasts have decreased;
- the EPA has released final emission allocations for the first phase of the Clean Air Interstate Rule ("CAIR");
- an early compliance program has been enacted; and
- the Companies have revised their NO_x emissions forecast.

As the May 2006 NO_x Compliance Strategy acknowledged, the economics of the Ghent 2 SCR are sensitive to the capital costs of the project and the forecast of NO_x allowance prices. At that time, it was estimated that capital costs would have to increase by 55 percent or NO_x allowance prices would have to decrease to 60 percent of the base case forecast to make the revenue requirements of purchasing allowances equivalent to that of building the SCR. Since May 2006, the estimated capital costs of the Ghent 2 SCR have increased by 21 percent while the forecast of NO_x allowance prices have decreased to 65 percent of the May 2006 forecast. Thus, while neither of these changes alone would suggest that the Companies defer the project; the combination of both events has caused the Companies to revisit the project's timing.

Further, under Kentucky's proposed regulations to implement the "Annual NO_x" provisions of CAIR, there will be a pool of approximately 15,000 allowances (Early Reduction Credits) available to generating units that reduce their annual NO_x emission rate in 2007 and/or 2008, compared to their 2005 emission rate. The Companies plan to operate their existing SCRs for additional weeks in 2008 outside the ozone season and expect to receive approximately 2,800 Annual NO_x allowances at a cost of approximately \$570 per ton of NO_x removed, which is well below the forecasted value of Annual allowances.

Essentially, building the Ghent 2 SCR is an option to reduce NO_x emissions that can be valued relative to the price of NO_x allowances. Therefore, like any option, the Companies want to exercise it when it is cost effective to do so. Based on current capital cost estimates of approximately \$115 million (for 2009 in service) and the project's expected operating costs, the Ghent 2 SCR removes NO_x at approximately \$3,500 per ton of equivalent allowances. With the

near-term forecast of allowance prices at approximately \$2,300 per ton, the revenue requirements analysis of the project indicates that it is no longer the least-cost option when compared to the price of allowances.

After evaluating the impact of this new information, the Companies have decided to delay the construction of the Ghent 2 SCR, subject to at least annual review, in order to provide both short-term and long-term savings for customers. Delaying this project is consistent with the Companies' May 2006 long-term NO_x compliance strategy of continuing to monitor the NO_x allowance market and the economics of applicable NO_x emission reduction technologies. This strategy will allow the Companies to comply with NO_x emissions regulations in the future in a least-cost manner.

Updated Ghent 2 SCR Cost Estimate

In the May 2006 analysis, the capital costs for the Ghent 2 SCR were based on the actual costs of building the Ghent 1 SCR escalated by 5 percent annually. This produced an estimated capital cost of \$95 million for a January 2009 in-service date. This was the best information available at the time. Following the Commission's decision in Case No. 2006-00206 in December 2006, conceptual engineering for the project was initiated. To date, this conceptual engineering has included:

- performance testing of the Ghent 2 boiler flue gas conditions,
- geotechnical exploration of soil conditions at the proposed site of the SCR,
- reviews of constructability and high level cost estimates of multiple design layouts to choose the least cost SCR ductwork and reactor layouts,
- design of final ductwork and reactor sizing,
- determination of foundation types,
- constructability reviews using knowledge of the Ghent FGD projects, and
- conceptual engineering level quantity projections of all SCR components.

As a result of this work, the capital cost estimate increased to \$115 million for a 2009 in-service date or 21 percent higher than the May 2006 estimate. The revised estimate was developed from the ground- up, using today's labor costs and labor efficiencies from the Companies' current projects, along with today's market prices for commodities, materials and engineered equipment. The unprecedented level of worldwide construction has resulted in commodity, material and engineered equipment prices increasing over the last two and a half years substantially more than the 5 percent escalation used to develop the original estimate for the Ghent 2 SCR. These price increases in labor, material and engineered equipment, along with extended lead times on deliveries, and labor productivity declines from historical norms have resulted in the increase in the Ghent 2 SCR construction cost estimate.

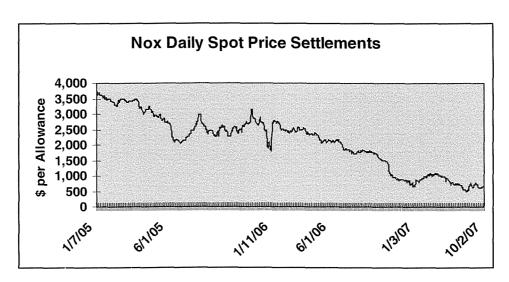
While costs have recently escalated at more than 5 percent annually, it is assumed that construction cost escalation rates will fall back to 5 percent or less as the Companies evaluate the project's economics in future years. As will be discussed later, it is assumed that the project cost will be \$120 million, \$126 million and \$148 million for in-service dates of 2010, 2011, and 2015, respectively (see Appendix 3 for annual spending forecasts).

Finally, while the Companies are deferring the construction of the project at this time, they will finalize all conceptual engineering by the second quarter of 2008. This will enable the Companies to more precisely estimate the project's costs and allow it to quickly proceed with construction should the economics become favorable.

NO_x Emission Allowance Markets

As described in the May 2006 NO_x Compliance Strategy, CAIR creates a new Annual NOx reduction program and retains the current Ozone Season NOx program (with some changes). The new Annual NOx reduction program is separate and independent of the ozone season program and allowances are not interchangeable between the programs. Therefore, during the Ozone Season, the Companies will be required to provide <u>both</u> an Annual and Seasonal NO_x allowance for each ton of NO_x emitted. Only an Annual allowance is required per ton of NO_x emitted outside of the ozone season.

Because the Annual emission program is so new, there has been little forward trading activity to date. Some initial trades were reported between financial institutions in August 2007 at approximately \$7,000/ton, but recent September 2007 trades have occurred at approximately \$3,500/ton. This initial volatility is to be expected as state allocations were uncertain and physical players have yet to enter the market. As with the Seasonal trading program, forecasters expect Annual prices to fall as program rules are better understood and the number of market participants increases. The chart below shows decline in the spot price for Seasonal allowances from over \$3,500/ton in early 2005 to approximately \$600/ton currently.



The forward market for 2008 and 2009 vintage Seasonal allowances is also trading in the \$550-\$600 per ton range. This price decline has been occasioned by a reduction in ozone season emissions¹, reflecting an increase in gas-fired generation² (which has lower NO_x emission rates compared to uncontrolled coal units). Lower emissions have increased the allowance banks of

¹ Total NO_x emissions in SIP-affected states declined from 530k tons in 2005 to 491k tons in 2006

² Gas-fired generation in the ozone season in SIP states increased from 12% of total generation in 2004 to over 15% in 2006.

market participants, and have tempered price expectations for ozone season NO_x compliance in the early years of the CAIR program since NO_x allowances can be carried forward into the ozone season NO_x program under CAIR.

The Companies' projection of Annual NO_x allowance prices is based on analysis by consultants Hill & Associates. Hill's forecast of allowance prices is derived from the all-in marginal cost of physical compliance with NO_x emission limits by construction of SCR and other NO_x abatement systems and represents "shadow prices" of Annual NO_x allowances. In their view, the majority of the all-in costs of compliance are assigned to the Annual NO_x program (i.e. the Annual emissions limits represent the binding constraint on plant operations).

At the time the current forecast was prepared in the fall of 2006, the spot price for Seasonal allowances was approximately \$1,500/ton and it was unclear how Seasonal and Annual allowance prices might be related. Therefore, the Companies felt it would be conservative, for planning purposes, to assume that Annual and Seasonal prices would be the same and adopted the Hill & Associates forecast. Recently, as Seasonal allowance prices have plummeted and more information has become available about the Annual allowance program, other third party forecasters such as PIRA, have forecasted Seasonal prices to remain near current levels while Annual prices are expected to be approximately \$2,000/ton (which is consistent with Hill & Associates' view of Annual prices).

The following table presents the Companies' current forecast of NO_x emissions allowance prices as well as the forecast from the Companies' 2006 NO_x Compliance Strategy. The table also shows the most recent NO_x price projections from PIRA, another reputable consulting firm. As can be seen, the more recent forecasts of Annual allowance prices are about 72% of the forecasts used in the May 2006 analysis in the near-term. These near-term changes are forecasted to continue over the longer term. One can also see that PIRA's forecast of Seasonal allowance prices are less than 15 percent of those used in the May 2006 analysis (for purposes of evaluating the economics of the Ghent 2 SCR, the Companies continue to assume that Annual and Seasonal prices are the same in the base case).

NO_x Emission Allowance Price Projections
(Nominal \$/ton)

	May 2006 NO _x Compliance Strategy	October 2007 Ghent 2 SCR Update	PIRA F	orecast 2007
	Annual & Seasonal	Annual & Seasonal	Seasonal	Annual
2010	3,047	2,366	429	2,002
2011	3,120	2,369	439	2,122
2012	3,195	2,372	449	2,247
2013	3,272	2,274	460	2,378
2014	3,351	2,250	471	2,514

The Companies will continue to review movements in NO_x allowance prices based on forward market indications and on fundamental analysis of supply and demand for allowances. Given the relative complexity and immaturity of the Annual NO_x allowance market, some continuing volatility in pricing can be anticipated. As discussed in the next section, however, the ability of the Companies to earn low-cost early reduction credits will likely eliminate exposure to Annual allowance prices in 2009.

Early Reduction NO_x Credits

Under Kentucky's proposed regulations to implement the "Annual NO_x" provisions of CAIR, there will be a pool of approximately 15,000 allowances (Early Reduction Credits) available to generating units that reduce their annual NO_x emission rates in 2007 and/or 2008, compared to their 2005 emission rate.

Each unit is assigned or earmarked a specified number of allowances and will earn them if it reduces emissions by that amount.³ Unearned allowances (e.g. allowances earmarked for units that do not earn them) will be distributed to units that reduced emissions in excess of their earmarked number, on pro rata basis, among all units in the state. Therefore, units that achieve reductions up to the earmarked level are guaranteed to earn an equal number of allowances. Reductions beyond these levels may earn allowances on less than a 1-for-1 basis if the pool of unearned allowances is over subscribed.

The Companies plan to operate the existing SCRs outside of the Ozone Season in 2008. The Companies expect to receive approximately 2,800 Annual NO_x allowances at a cost of approximately \$570 per ton of NO_x removed, which is well below the forecasted value of allowances. These 2,800 allowances will more than cover the Companies' expected 2009 Annual allowance shortfall of 1,684 tons and much of the 2010 shortfall of 1,566 tons. The availability of the early reduction program is an important aspect of the decision to defer the construction of the Ghent 2 SCR.

Updated NO_x Emissions Forecast

Ozone Season NO_x Position

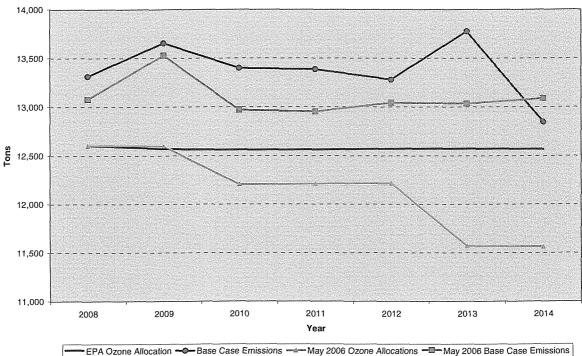
As of December 31, 2006, the Companies had a combined bank of 6,975 Seasonal allowances. While final accounting has not been completed, the Companies expect to have approximately 5,600 Seasonal allowances at year-end 2007.

The following graph illustrates the differences between forecasts of the Companies' ozone season NO_x emission levels and their allocation of ozone season allowances for the October 2007 Ghent 2 SCR Analysis Update and the May 2006 NO_x Compliance Strategy. As can be seen, the

³ Emission reductions will be calculated as the difference in annual emission rates (lb/mmBtu) between 2005 and 2007/2008 multiplied by the heat input in 2007/2008. As such, it is more accurately the reduction achieved in 2007/2008 compared to what the unit would have emitted if it emitting at its 2005 emission rate. Therefore, for example, reduced utilization or outages in 2007/2008 do not produce qualifying early reductions. In fact, they serve to reduce the number of calculated early reductions by reducing the heat input.

most recent information from the EPA indicates that the Companies will receive more allowances than what was anticipated in the 2006 NO_x Compliance Strategy (see Appendix 1 for the Companies' allocation). Comparing the two base cases, the ozone season NO_x emissions are approximately 300 tons higher on average through 2014 for the updated analysis base case compared to the 2006 NO_x Compliance Strategy base case.

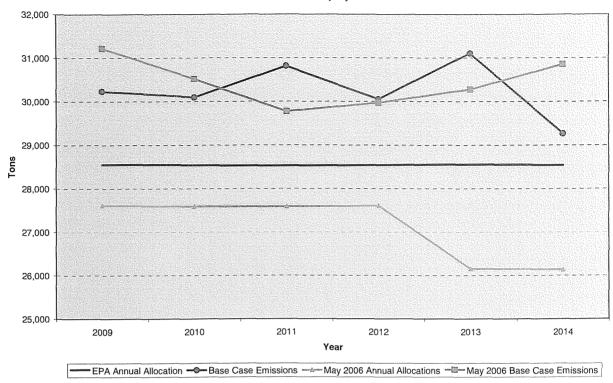




Annual NOx Position

The following graph illustrates the differences between forecasts of the Companies' Annual NO_x emission levels and their allocation of Annual allowances for the October 2007 Ghent 2 SCR Analysis Update and the May 2006 NO_x Compliance Strategy. As can be seen, the most recent information from the EPA indicates that the Companies will receive more allowances than what was anticipated in the 2006 NO_x Compliance Strategy (see Appendix 1 for the Companies' allocation). Comparing the two base cases, the Annual NO_x emissions are approximately the same on average through 2014.

Annual NOx Allowance Allocation and Emissions Combined Company



Projections are that the Companies will emit nearly 2,000 tons more NO_x than is will receive in allowances in 2009. This shortfall is expected to average approximately 1,700 tons annually through 2014 (the end of CAIR Phase I) which is 1,600 tons less per year than was anticipated in the May 2006 analysis.

Enhancing Existing SCR Performance

None of the above projections incorporate the possibility of enhancing SCR performance of the Companies' existing six SCRs. The six existing SCRs were designed for both ozone season and year-round operation. However, the SCRs were optimized primarily for ozone season operation relative to ammonia feed to allow the full potential of ammonia to react with NO_x achieving NO_x reductions of 90 percent. During the ozone season, these units primarily run at load levels and corresponding boiler exit flue gas temperatures above temperatures that allow full ammonia feed based on NO_x inlet loading to the SCRs. The minimum temperatures are established to avoid "over feeding" ammonia into the flue gas stream where ammonia bi-sulfate could form and foul downstream air pollution control equipment during times of low boiler exit flue gas temperatures (low load levels). Currently, ammonia feed is eliminated below the recommended minimum flue gas temperature. While NO_x reduction does not occur, harmful ammonia bi-sulfate does not However, the potential exists to inject ammonia at reduced rates when the flue gas temperature falls below the recommended minimum temperatures. The injection of ammonia at reduced rates during low unit loading (i.e., low boiler exist gas temperature) will allow NO_x removal at levels below the 90 percent designed removal rate. SCR controls could be

programmed to feed reduced levels of ammonia at low loads and remove NO_x at rates up to 50 percent or more.

This economics of this operation will be evaluated and could provide a low cost means to reduce emissions in both the ozone and non-ozone season, thus reducing either the need to purchase Annual allowances or extend the life of the Seasonal allowance bank.

Ghent 2 SCR Economics

Ghent 2 SCR Costs

As discussed above, revised cost estimates were developed for the construction of the Ghent 2 SCR in 2009 as well as for delaying the project by one year to several years, depending on developments in the allowance markets and project construction costs. Essentially, the project is an option to reduce emissions that can be valued relative to the price of allowances. Therefore, like any option, the Companies want to exercise it when it is "in the money." Based on current capital cost estimates of approximately \$120 million (2010 in-service) and the projects expected operating costs, the Ghent 2 SCR removes NO_x at approximately \$3,500/ton. As was previously discussed, the near-term forecast of allowance prices is approximately \$2,300/ton. Therefore, as will be discussed below, the revenue requirements analysis of the project indicates that it would be prudent for the Companies to defer its construction at this time.

The table below describes four options considered for construction of the project (based on inservice date). Case 0 is the Companies' system as it exists today – no Ghent 2 SCR. Base annual capital cost cash flows associated with each of the options can be found in **Appendix 2**. The SCR is assumed to remove close to 90% of the NO_x when operating, but does not do so during those hours in which the units are run at low generation levels; i.e. the SCRs do not operate 100% of the time (see previous section).

Ghent	2	NO_{x}	Control	Alternatives
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	NO _x Control	In-Service	Installed Cost ¹	Incremental Fixed O&M ²	incremental Variable O&M ³	NO _x Emiss		NO _x Removal	Net Derate
Case	<u>Technology</u>	<u>Date</u>	<u>(\$ M)</u>	<u>(\$/yr)</u>	<u>(\$/MWh)</u>	<u>Before</u>	<u>After</u>	<u>%</u>	<u>(MW)</u>
0	Base								
1	SCR	May-2009	114.7	424,495	0.34	0.25	0.035	0.86	2
2	SCR	May-2010	120.4	431,287	0.35	0.25	0.035	0.86	2
3	SCR	May-2011	126.4	438,188	0.36	0.25	0.035	0.86	2
4	SCR	May-2015	147.9	466,912	0.38	0.25	0.035	0.86	2

Notes:

- 1. Installed costs are the sum of annual construction expenditures in nominal dollars
- 2. Fixed O&M is expressed in the year the SCR operation commences.
- 3. Variable O&M includes ammonia and is expressed in the year the SCR operation commences.

Least Cost Evaluation

Consistent with recent evaluations of this type, the Companies evaluated the above alternatives using the PROSYMTM detailed hourly production costing computer model and the Strategist Capital Expenditure and Recovery ("CER") module. Used together, these tools have the capability of simulating the hourly production costs (fuel, fixed and variable operation and

maintenance, emissions, etc.) and quantifying the revenue requirements impact associated with capital projects. **Appendix 3** contains economic and forward looking assumptions used in this analysis. Each Option was independently evaluated within PROSYMTM using the above estimates for capital construction costs and the Companies' base price forecast for NO_x allowances (which assumes that Seasonal and Annual allowance prices are the same).

Each of the five cases assumed that any shortfall in NO_x allowances would be made up by purchasing the required number of allowances from the allowance market on an as-needed basis. Again, this analysis did not incorporate any benefits of early reduction credits or enhanced operation of the Companies' existing SCRs. The total 30-year present value revenue requirement ("PVRR") of each case has been categorized into four areas:

- 1. <u>Production Costs</u>: represent the revenue requirements associated with fuel, fixed and variable operation and maintenance expenses, and purchased power expenses.
- 2. $\underline{NO_x Allowance \ Costs}$: represent the revenue requirements associated with the purchasing of the total number of (Annual and/Seasonal) NO_x allowances.
- 3. <u>Capital Costs</u>: represent the revenue requirements associated with any capital expenditures for the case.

The following table is a summary of the annual data contained in **Appendix 5**, which presents the annual cost results of all Cases evaluated and compares them to the Base Case.

Case Summary (30 Year Analysis)								
		(All Co	sts in Million \$ 8	2007 NPVRR)				
		NOx	NO _x				Total Ozone	Total Annual
		Ozone	Annual			Incremental	Season NO _x	NO _x
	Production	Allowance	Allowance	Capital	Total	Cost Over	Aliowance	Allowance
Case	Cost	Cost	Cost	Cost	NPVRR	Base	Purchases	Purchases
Case 0: Base Case (No GH2 SCR)	\$16,917.6	\$64.8	\$166.6	\$0.0	\$17,149.0	\$0.0	80,380	198,124
Case 1: Ghent 2 SCR 2009	\$16,942.2	\$25.1	\$73.6	\$139.3	\$17,180.2	\$31.2	39,354	104,350
Case 2: Ghent 2 SCR 2010	\$16,940.8	\$26.9	\$77.1	\$135.1	\$17,179.8	\$30.8	40,920	107,489
Case 3: Ghent 2 SCR 2011	\$16,939.4	\$28.8	\$82.8	\$130.8	\$17,181.7	\$32.8	42,453	110,928
Case 4: Ghent 2 SCR 2015	\$16,934.2	\$37.3	\$104.0	\$105.9	\$17,181.3	\$32.4	48,255	124,182

The Base Case is the first case listed in the above table, "Case 0: Base Case (No GH2 SCR)". The 30 year NPVRR of each case is compared to that of the Base Case. Results indicate that purchasing allowances is favored over construction of the Ghent 2 SCR by over \$30 million in all cases

The May 2006 30-year analysis indicated that constructing the Ghent 2 SCR for a May 2009 inservice was \$59.7 million more economical that the no build base case, which results in a \$90.9 million swing in NPVRR (\$59.7 + \$31.2). New capital costs are responsible for approximately 35% of the swing and the remaining change of 65% is due to NO_x allowance purchase requirements (incorporates decreased NO_x emission allowance pricing and increased EPA allocations).

The table above indicates that Ghent 2 cannot provide 100% of the NO_x reductions required to comply through the study period without purchasing allowances from the allowance market. For

2008-2014, no ozone season NO_x emission allowance purchases are required, but approximately 10,300 Annual NO_x emission allowance purchases are anticipated (excluding early reduction credits).

Summary of Results

The purchasing of allowances as needed, or "Case 0: Base Case (No GH2 SCR)", is the lowest cost case with a NPVRR of \$17.149 billion; \$30.9 million lower than the NPVRR of the closest NPVRR case (Case 2: Ghent 2 SCR in 2010). All cases that contain an SCR have higher NPVRR by more than \$30 million. Furthermore, this analysis assumes no savings from earning early reduction credits and the potential to enhance the NO_x removal of the Companies existing SCRs.

Sensitivity of NO Prices Evaluated

To address the uncertainty of associated with the allowance price forecast, it is appropriate to evaluate the economics of the project under alternative forecasts. One was to do this is to solve for how much the forecast would have to change before the project would become "in the money" or, in other words, the least-cost alternative. To determine how sensitive the economics of the Ghent 2 SCR is to NO_x market prices, the NPVRR of each of the four alternatives and the Base Case was quantified, assuming the forecast of NO_x allowance prices was a multiple of the base NO_x allowance price projection (as shown in **Appendix 3**).

Construction of the GH2 SCR in 2010 becomes the least cost alternative only when NO_x allowance prices are 25% higher than the allowance price projections included in this analysis. The May 2006 analysis indicated that NO_x allowance prices would need to be approximately 60% of the prices included in the analysis for the base case to be economical. Current prices are approximately 65% on average of those included in the May 2006 analysis.

Furthermore, if PIRA's allowance price forecast is used (which forecasts Seasonal allowance prices to remain close to current level), then the 30-year NPVRR of purchasing allowances rather than building the project are better by \$40 million dollars.

Incorporation of the new pricing and updated construction costs into the May 2006 analysis would have changed the timing of the Ghent 2 SCR but would not have altered the Companies' long-term compliance strategy.

Conclusions and Recommendation

An increase in the capital costs and a reduction in forecasted allowance prices forecasts mean that proceeding to build the Ghent 2 SCR at this time is no longer the least-cost NO_x compliance option at this time. Based on current cost estimates, the project removes NO_x at approximately \$3,500/ton which is well above near-term price forecasts. Since the Companies reasonably expect to be able to build the SCR in the future should allowance prices increase, they will continue to monitor forward allowance market prices and evaluate long-term price forecasts. Furthermore, the Companies will seek to take advantage of low-cost early compliance credits and will finalize conceptual engineering for the project to reduce project cost uncertainty and the amount of time required to build the project should it become economic in the future.

Appendix 1

Final Allowance Allocation (for 2009-2014) and Estimated Future Allowances to Implement CAIR LG&E values include 75% of TC1

Annual NOx	2009-2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
KU	15,158	12,295	12,295	12,043	11,780	11,585	11,306	10,987	10,686	10,587
LGE	13,383	10,947	10,947	11,242	11,767	12,330	12,284	11,938	11,610	11,503
OMU	2,542	2,079	2,079	2,037	1,992	1,959	1,912	1,858	1,807	1,790
Ozone Season NOx	2009-2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
KU	6,683	5,554	5,499	5,391	5,287	5,212	5,039	4,900	4,768	4,768
LGE	5,885	4,935	4,886	5,009	5,237	5,483	5,407	5,258	5,116	5,116
OMU	1,131	948	939	920	903	890	860	837	814	814

	Acid Rain Allo	cation
SO2	2000-2009	2010+
KU	83,343	77.535
LGE	62,456	59,966
OMU	9,018	9,034

Plant Summary Final NOx Allocations 2009-2014

	Ozone Season	Annual
Brown	1,670	3,587
Ghent	4,500	10,361
Green River	352	847
Pineville	17	44
Tyrone	144	319
KU Total	6,683	15,158
Cane Run	1,276	2,940
Mill Creek	3,542	8,088
Paddy's Run	26	30
Trimble Co*	1,041	2,325
LG&E Total*	5,885	13,383

^{*} includes only 75% of TC1

8/16/2007

NOx Allocations

Final Values for 2009-2014 from KYDAQ, June 2007

Future values based assumptions on new units to be built in Kentucky and phased into allocation pool

For SO2, KYDAQ has proposed adopting U.S. EPA's model rule which would function as follows:

For emissions during 2010-2014, utilities are required to surrender allowances as follows:

vintage 2009 and earlier, surrender on a 1-for-1 basis,
 vintage 2010-2014, surrender on a 2-for-1 basis
 For emissions in 2015 and after, utilities are required to surrender allowances as follows:

- vintage 2009 and earlier, surrender on a 1-for-1 basis,
 vintage 2010-2014, surrender on a 2-for-1 basis
 vintage 2015 and later, surrender on a 2 86-for-1 basis

There is significant benefit to banking allowances prior to 2010.

Appendix 2

	Total Annual Construction Expenditures (\$000 nominal)										
Case	Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
0	Base										-
1	Ghent 2 SCR 2009	\$35.1	\$42.2	\$37.4							\$114.7
2	Ghent 2 SCR 2010	\$1.3	\$35.5	\$44.4	\$39.3						\$120.4
3	Ghent 2 SCR 2011		\$1.3	\$37.3	\$46.6	\$41.3					\$126.4
4	Ghent 2 SCR 2015						\$1.6	\$43.6	\$54.5	\$48.3	\$147.9

Appendix 3

General Assumptions

• Study Period: 30-year period for Production Cost impacts (2008-2037) 30-year period for Capital Costs impacts (2008-2037)

The production costs include items such as fuel, O&M, purchase power etc and are estimated using the PROSYM production model. The model was run for the 2008-2037 time period.

The revenue requirements associated with capital costs are determined via the Capital Expenditure and Recovery module of the Strategist production and capital costing software.

- KU/LGE continues as a regulated entity subject to the oversight of the Kentucky Public Service Commission and that the Commission continues the requirement of the Companies implementing the least cost strategy to the benefit of the native load ratepayers.
- The capital costs, O&M costs and the costs of increased emissions (both NO_x and SO₂) associated with the addition of new environmental projects will be subject to recovery through the Environmental Cost Recovery mechanism.

• Financial Data

>	KU/LG&E Discount Rate (%):	7.85 %
	* *	
	Kentucky Utilities Discount Rate (%):	8.02 %
\nearrow	Federal Income Tax Rate (%)	39.55 %
\triangleright	AFUDC Rate (%):	7.85 %
	Insurance Rate (%):	0.053 %
\triangleright	Property Tax Rate (%):	0.15 %
\nearrow	Percentage of Debt in Capital Structure (%):	44.05 %
A	Debt Interest Rate/Weighted Cost of Debt (%):	4.88 %
\triangleright	Desired Return on Rate base (%):	7.85 %
	Capitalized Interest Debt Rate (%):	4.88 %
	Environmental Projects Book Life (years):	34 years
	Environmental Projects Tax Life (years):	20 years
\triangleright	Annual capital cost escalation rate (%):	5.0 % for 2010-11
	-	4.0 % for 2012 +
\triangleright	Annual Fixed O&M escalation rate (%):	1.6 %
	Annual Variable O&M escalation rate (%):	1.6 %

• NO_x Allowance Prices

	Base NOx	Pricing	PIRA NOx	Pricing	2006 ECF	R Filing
\$/ton	Ozone	Annual	Ozone	Annual	Ozone	Annual
2010	2,366	2,366	429	2,002	3,047	3,047
2011	2,369	2,369	439	2,122	3,120	3,120
2012	2,372	2,372	449	2,247	3,195	3,195
2013	2,274	2,274	460	2,378	3,272	3,272
2014	2,250	2,250	471	2,514	3,351	3,351
2015	3,098	3,098	483	2,654	3,946	3,946
2016	3,092	3,092	494	2,768	4,040	4,040
2017	3,086	3,086	506	2,885	4,137	4,137
2018	3,122	3,122	518	3,006	4,237	4,237
2019	3,149	3,149	531	3,131	4,338	4,338
2020	3,177	3,177	543	3,260	4,442	4,442
2021	3,250	3,250	556	3,395	4,549	4,549
2022	3,282	3,282	570	3,536	4,658	4,658
2023	3,281	3,281	583	3,682	4,770	4,770
2024	3,123	3,123	597	3,834	4,865	4,865
2025	2,970	2,970	612	3,993	4,962	4,962
2026	3,018	3,018	626	4,158	5,062	5,062
2027	3,066	3,066	642	4,330	5,163	5,163
2028	3,115	3,115	657	4,509	5,267	5,267
2029	3,165	3,165	673	4,695	5,372	5,372
2030	3,215	3,215	689	4,889	5,479	5,479
2031	3,267	3,267	705	5,092	5,589	5,589
2032	3,319	3,319	722	5,302	5,700	5,700
2033	3,372	3,372	740	5,521	5,815	5,815
2034	3,426	3,426	757	5,750	5,931	5,931
2035	3,481	3,481	776	5,988	6,049	6,049
2036	3,537	3,537	794	6,235	6,170	6,170
2037	3,593	3,593	813	6,493	6,294	6,294

• Fuel Forecast (Base Assumptions)

O Any and all fuel cost savings associated with serving native load will be returned to the ratepayer though the Fuel Adjustment Clause mechanism.

Appendix 4

Total N	IO _x Ozone Sea	son Emission	Allowance Pui	rchases (Allow	ances)
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008	•	-	•	-	-
2009	-	-	-	*	-
2010	-	-	-	-	-
2011	*	-	-	-	~
2012	~	-	-	•	-
2013		-	-	-	
2014	-	-	-	-	-
2015	1,894	-	-	-	520
2016	2,918	-	-	-	1,584
2017	2,988	-	-	-	1,591
2018	2,927	-	-	-	1,461
2019	2,832	-	-	824	1,470
2020	2,980	-	791	1,500	1,500
2021	3,358	1,242	2,017	2,017	2,017
2022	3,600	2,181	2,181	2,181	2,181
2023	3,768	2,274	2,274	2,274	2,274
2024	3,761	2,431	2,431	2,431	2,431
2025	3,934	2,423	2,423	2,423	2,423
2026	3,962	2,600	2,600	2,600	2,600
2027	4,001	2,478	2,478	2,478	2,478
2028	3,325	2,045	2,045	2,045	2,045
2029	3,781	2,307	2,307	2,307	2,307
2030	3,876	2,403	2,403	2,403	2,403
2031	3,755	2,384	2,384	2,384	2,384
2032	3,962	2,484	2,484	2,484	2,484
2033	3,788	2,419	2,419	2,419	2,419
2034	3,762	2,399	2,399	2,399	2,399
2035	3,659	2,418	2,418	2,418	2,418
2036	3,457	2,223	2,223	2,223	2,223
2037	4,094	2,645	2,645	2,645	2,645
Total	80,380	39,354	40,920	42,453	48,255

To	tal NO _x Annual	Emission Allo	wance Purcha	ses (Allowand	es)
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008	-	-	-	-	-
2009	1,684	-	1,684	1,684	1,684
2010	1,566	-	-	1,566	1,566
2011	2,289	-	-	-	2,289
2012	1,507	-	-	-	1,507
2013	2,554	-	-	-	2,554
2014	729	-	-	-	729
2015	5,473	-	-	-	3,204
2016	6,450	-	-	183	3,154
2017	6,868	426	1,881	3,571	3,571
2018	6,548	3,257	3,257	3,257	3,257
2019	5,938	2,955	2,955	2,955	2,955
2020	7,134	3,794	3,794	3,794	3,794
2021	7,782	4,425	4,425	4,425	4,425
2022	8,451	5,088	5,088	5,088	5,088
2023	8,480	5,129	5,129	5,129	5,129
2024	9,132	5,737	5,737	5,737	5,73
2025	8,820	5,443	5,443	5,443	5,443
2026	8,327	5,279	5,279	5,279	5,279
2027	9,423	6,024	6,024	6,024	6,024
2028	8,863	5,531	5,531	5,531	5,53 ⁻
2029	8,757	5,479	5,479	5,479	5,479
2030	8,683	5,406	5,406	5,406	5,400
2031	9,158	5,844	5,844	5,844	5,844
2032	9,037	5,737	5,737	5,737	5,737
2033	8,238	5,332	5,332	5,332	5,332
2034	8,754	5,597	5,597	5,597	5,59
2035	9,043	5,835	5,835	5,835	5,83
2036	9,188	5,984	5,984	5,984	5,984
2037	9,248	6,048	6,048	6,048	6,048
otal	198,124	104,350	107,489	110,928	124,182

Appendix 5

Confidential Information Redacted

Total Pr	oduction Cost	s (\$ Millions):	Fuel, O&M, Po	wer Purchases	3
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008					
2009					
2010					
2011					
2012					
2013					
2014					
2015					
2016					
2017					
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
2026					
2027					
2028					
2029					
2030					
2031					
2032					
2033					
2034					
2035					
2036					
2037					
30-Yr NPVRR	\$16,917.6	\$16,942.2	\$16,940.8	\$16,939.4	\$16,934.2
30-Yr Delta from Min		\$24.6	\$23.1	\$21.7	\$16.5

	Total	Capital Costs	(\$ Millions)		
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008	-	\$13.2	\$4.4	\$0.2	
2009	_	\$17.3	\$9.3	\$4.4	-
2010	-	\$16.6	\$18.2	\$9.8	-
2011	-	\$16.0	\$17.5	\$19.1	-
2012	-	\$15.4	\$16.8	\$18.3	\$0.2
2013	-	\$14.8	\$16.1	\$17.6	\$5.0
2014		\$14.2	\$15.5	\$16.9	\$11.0
2015	-	\$13.7	\$14.9	\$16.3	\$21.5
2016	-	\$13.1	\$14.3	\$15.7	\$20.6
2017	-	\$12.6	\$13.8	\$15.1	\$19.8
2018	-	\$12.1	\$13.2	\$14.5	\$19.1
2019	-	\$11.6	\$12.7	\$13.9	\$18.3
2020	-	\$11.1	\$12.2	\$13.3	\$17.6
2021	-	\$10.5	\$11.6	\$12.8	\$16.9
2022	-	\$10.0	\$11.1	\$12.2	\$16.3
2023	-	\$9.5	\$10.5	\$11.6	\$15.6
2024	-	\$9.0	\$10.0	\$11.0	\$15.0
2025		\$8.4	\$9.4	\$10.5	\$14.4
2026	-	\$7.9	\$8.9	\$9.9	\$13.7
2027	-	\$7.4	\$8.3	\$9.3	\$13.1
2028		\$6.9	\$7.8	\$8.7	\$12.4
2029		\$6.5	\$7.2	\$8.2	\$11.8
2030	-	\$6.2	\$6.8	\$7.6	\$11.1
2031	-	\$5.9	\$6.5	\$7.1	\$10.5
2032	-	\$5.7	\$6.2	\$6.8	\$9.8
2033	-	\$5.4	\$5.9	\$6.5	\$9.2
2034	-	\$5.1	\$5.6	\$6.2	\$8.5
2035	-	\$4.8	\$5.4	\$5.9	\$8.0
2036	-	\$4.6	\$5.1	\$5.6	\$7.7
2037		\$4.3	\$4.8	\$5.3	\$7.3
NPVRR	-	\$139.3	\$135.1	\$130.8	\$105.9
Delta from Min	-	\$139.3	\$135.1	\$130.8	\$105.9

Total NO _x Oz	zone Season E	mission Allow	ance Purchase	e Costs (\$ Milli	ions)
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008	-	•	-	÷	-
2009	-	-	-	-	-
2010	•	•	-	-	
2011	-		-	-	-
2012	-	-	-	-	-
2013	-	-	-	-	- 1
2014	-	-	-	-	-
2015	\$5.9	-	-		\$1.6
2016	\$9.0	-	-	-	\$4.9
2017	\$9.2	-	-	-	\$4.9
2018	\$9.1	-	-	-	\$4.6
2019	\$8.9	•	-	\$2.6	\$4.6
2020	\$9.5	-	\$2.5	\$4.8	\$4.8
2021	\$10.9	\$4.0	\$6.6	\$66	\$6.6
2022	\$11.8	\$7.2	\$7.2	\$7.2	\$7.2
2023	\$12.4	\$7.5	\$7.5	\$7.5	\$7.5
2024	\$11.7	\$7.6	\$7.6	\$7.6	\$7.6
2025	\$11.7	\$7.2	\$7.2	\$7.2	\$7.2
2026	\$12.0	\$7.8	\$7.8	\$7.8	\$7.8
2027	\$12.3	\$7.6	\$7.6	\$7.6	\$7.6
2028	\$10.4	\$6.4	\$6.4	\$6.4	\$6.4
2029	\$12.0	\$7.3	\$7.3	\$7.3	\$7.3
2030	\$12.5	\$7.7	\$7.7	\$7.7	\$7.7
2031	\$12.3	\$7.8	\$7.8	\$7.8	\$7.8
2032	\$13.1	\$8.2	\$8.2	\$8.2	\$8.2
2033	\$12.8	\$8.2	\$8.2	\$8.2	\$8.2
2034	\$12.9	\$8.2	\$8.2	\$8.2	\$8.2
2035	\$12.7	\$8.4	\$8.4	\$8.4	\$8.4
2036	\$12.2	\$7.9	\$7.9	\$7.9	\$7.9
2037	\$14.7	\$9.5	\$9.5	\$9.5	\$9.5
NPVRR	\$64.8	\$25.1	\$26.9	\$28.8	\$37.3
Delta from Min	\$39.7	-	\$1.8	\$3.7	\$12.2

Total NO	x Annual Emis	sion Allowanc	e Purchase Co	sts (\$ Millions	:)
	Case 0	Case1	Case2	Case3	Case4
	Do Nothing	GH2 SCR 2009	GH2 SCR 2010	GH2 SCR 2011	GH2 SCR 2015
2008		-	*	-	-
2009	\$1.6	-	\$1.6	\$1.6	\$1.6
2010	\$37	-	•	\$3.7	\$3.7
2011	\$5.4	-	•	-	\$5.4
2012	\$3.6	-	-	-	\$3.6
2013	\$5.8	-	-	-	\$5.8
2014	\$1.6	-	~	*	\$1.6
2015	\$17.0	-	-	-	\$9.9
2016	\$19.9	-	-	\$0.6	\$9.8
2017	\$21.2	\$1.3	\$5.8	\$11.0	\$11.0
2018	\$20.4	\$10.2	\$10.2	\$10.2	\$10.2
2019	\$18.7	\$9.3	\$9.3	\$9.3	\$9.3
2020	\$22.7	\$12.1	\$12.1	\$12.1	\$12.1
2021	\$25.3	\$14.4	\$14.4	\$14.4	\$14.4
2022	\$27.7	\$16.7	\$16.7	\$16.7	\$16.7
2023	\$27.8	\$16.8	\$16.8	\$16.8	\$16.8
2024	\$28.5	\$17.9	\$17.9	\$17.9	\$17.9
2025	\$26.2	\$16.2	\$16.2	\$16.2	\$16.2
2026	\$25.1	\$15.9	\$15.9	\$15.9	\$15.9
2027	\$28.9	\$18.5	\$18.5	\$18.5	\$18.5
2028	\$27.6	\$17.2	\$17.2	\$17.2	\$17.2
2029	\$27.7	\$17.3	\$17.3	\$17.3	\$17.3
2030	\$27.9	\$17.4	\$17.4	\$17.4	\$17.4
2031	\$29.9	\$19.1	\$19.1	\$19.1	\$19.1
2032	\$30.0	\$19.0	\$19.0	\$19.0	\$19.0
2033	\$27.8	\$18.0	\$18.0	\$18.0	\$18.0
2034	\$30.0	\$19.2	\$19.2	\$19.2	\$19.2
2035	\$31.5	\$20.3	\$20.3	\$20.3	\$20.3
2036	\$32.5	\$21.2	\$21.2	\$21.2	\$21.2
2037	\$33.2	\$21.7	\$21.7	\$21.7	\$21.7
NPVRR	\$166.6	\$73.6	\$77.1	\$82.8	\$104.0
Delta from Min	\$92.9	-	\$3.5	\$9.2	\$30.4

Confidential Information Redacted

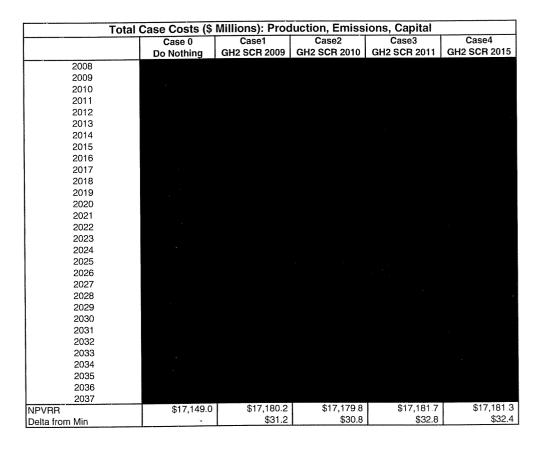


EXHIBIT B

5.0000 C.S.

Ghent 2 SCR Analysis Update – Timing of Construction

Kentucky Public Service Commission

October 18, 2007



Ghent 2 SCR events

May 2006

2006 NO $_{_{\mathrm{X}}}$ Compliance Strategy completed

December 21, 2006

CCN/ECR recovery granted for Ghent 2 SCR (2009 in-service)

Updated analysis of timing of Ghent 2 SCR

Summer 2007

Decision to delay Ghent 2 SCR construction

September 2007

CCN for Ghent 2 SCR will lapse without the

December 21, 2007

start of construction



2006 NO_x Compliance Strategy - Case No. 2006-00206

- Ghent 2 SCR (in-service in 2009) was identified as a least-cost option
- Allowance shortfalls would likely be made up through market purchases
- project capital cost and forecasted allowance prices. Project • The recommendation to construct GH2 SCR was sensitive to breakeven point was either at:
- Increase in capital costs of 55% from base case or
- Decrease in allowance prices to 60% of base case
- Further recommended that the Companies continue to monitor the emission allowance market



Updated Analysis - Delay construction of Ghent 2 SCR

Changes	May 2006	October 2007
Capital Cost (2009 in-service)	\$95 million	\$115 million
Allowance Price Forecast	~\$3200/ton	~\$2300/ton
Early Reduction Credits	Details not final – not considered	Available
Allowance allocation	Seasonal: 11,600 – 12,250 Annual: 26,100 – 27,600	Seasonal: 12,600 Annual: 28,500
30-year NPVRR	\$60 million	\$(30) million



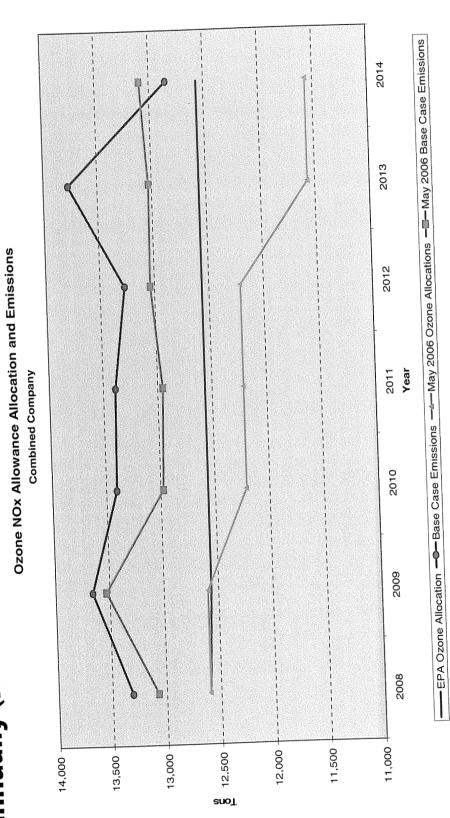
Current Forecast of NO_{x} prices is on average 65% of May 2006 Forecast

	Base NOx Pricing	Pricina	PIRA NOx Pricing	Pricina	2006 ECF	ECR Filing
\$/ton	Ozone	Annual	Ozone	Annual	Ozone	Annual
2010	2,366	ΙÓ	429	10	O	3,047
2011	2,369	2,369	439	2,122	3,120	3,120
2012	2,372		449	Ø	19	3,195
2013	2,274	2,274	460	2,378	3,272	
2014	2,250	2,250	471	2,514	3,351	3,351
2015	3,098	60	483	2,654	3,946	3,946
2016	3,092	3,092	494	9/	4,040	4,040
2017	3,086	9	206	2,885	4,137	(7)
2018	3,122	3,122	518	3,006	4,237	4,237
2019	3,149	4	531	3,131	4,338	4,338
2020	3,177	~	543	3,260	4,442	4,442
2021	3,250	3,250	556	3,395	4,549	4,549
2022	3,282	3,282	570	3,536	4,658	4,658
2023	CA	3,281	583	3,682	4,770	4,770
2024		3,123	297	3,834	4,865	4,865
2025	တ	2,970	612	3,993	4,962	4,962
2026	3,018	3,018	626	4,158	5,062	5,062
2027	3,066	3,066	642	4,330	5,163	一
2028	3,115	3,115	657	4,509	5,267	5,267
2029	3,165	16	673	4,695	5,372	ഗ്
2030	3,215	3,215	689	4,889	4	,47
2031	3,267	9	705	5,092	5,589	5,589
2032	-	3,319	722	5,302	2,700	0
2033	3,372	3,372	740	5,521	5,815	5,815
2034	3,426	3,426	757	5,750	5,931	5,931
2035	3,481	3,481	276	Ω	6,049	Õ
2036	3,537	3,537	794	6,235	Τ,	Τ.
2037	3,593	3,593	813	6,493	6,294	6,294



Ozone Season allowance shortfall is approximately 1,000 tons annually (7% of total emissions)

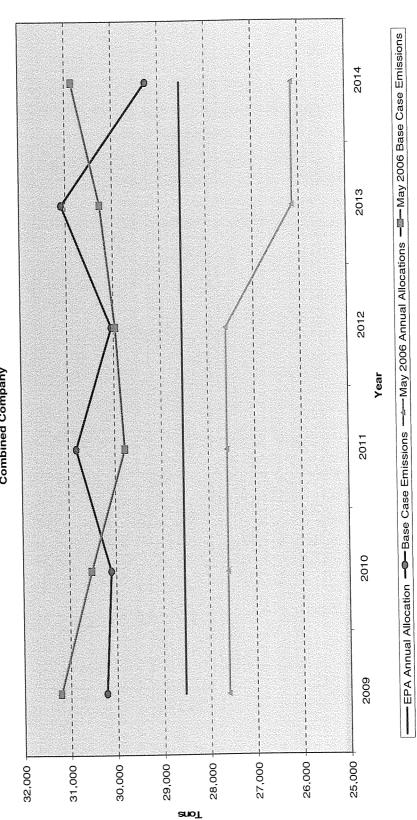






Annual allowance shortfall is less than 2,000 tons annually (7% of total emissions) w/o Early Reduction Credits







Potential to Further Reduce Future Emissions by **Enhancing Existing SCR Performance**

- Potential to reduce emissions by operating existing SCRs at low unit loadings
- Requires ammonia injection at reduced rates during lower boiler flue gas exit temperatures
 - ullet Allows NO $_{_{\mathrm{X}}}$ removal at a rate of up to 50% or more



Actions and Recommendations

- Continue to review NO_x compliance alternatives
- Complete Ghent 2 SCR conceptual engineering
- Take advantage of early reduction credits
- Evaluate enhancing existing SCR performance
- Actively manage allowance purchases
- Regular evaluation of Ghent 2 SCR economics
- Ghent 2 SCR CCN expires on December 21, 2007
- File Motion in Case No. 2006-00206 to:
- Provide updated analysis on Ghent 2 SCR
- Request removal of ECR Project 26 from KU's 2006 Compliance Plan
- Request modification of monthly filing forms to remove ECR Project 26
- Cease recovery of ECR Project 26 costs beginning with the September 2007 expense month ECR filing

EXHIBIT C

Revised ES Form 2.10 Page 1 of 2

KENTUCKY UTILITIES COMPANY ENVIRONMENTAL SURCHARGE REPORT Plant, CWIP & Depreciation Expense

For the Month Ended:

(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)
Description	Eligible Plant In Service	Eligible Accumulated Depreciation	CWIP Amount Excluding AFUDC	Eligible Net Plant In Service	Unamortized ITC as of mm/dd/yyyy	Deferred Tax Balance as of mm/dd/yyyy	Monthly Depreciation Expense	Monthly Property Tax Expense
				(2)-(3)+(4)				
2001 Plan: Project 16 - KU Nox modifications Project 17 - KU Nox SCR's	ν 9	ν,	vs	м	. ,	. ·	. ,	69
Subrotal Less Retirements and Replacement resulting from implementation of 2001 Plan	1 1		1 1	, ,	, ,			
Net Total - 2001 Plan:				- 8	- \$	- \$		
2003 Plan: Project 18 - Ghent Ash Pond Dike Elevation	t	1	•	•	'	,	,	,
Subtotal Less Retirements and Replacement resulting from implementation of 2003 Plan	ı	, ,	1 +	, ,	, ,	k (, ,	
Net Total - 2003 Plan:	- \$	- \$	- 8	- 8			· - S	. · S
2005 Plan: Project 19 - Ash Handling at Ghent 1 and Ghent Station Project 20 - Ash Treatment Basin Expansion at E.W. Brown Station Project 21 - FGD's at all E.W. Brown Units and at Ghent I, 3, and 4	1 1 1							
Subtotal Less Retirements and Replacement resulting from implementation of 2005 Plan	i i	1 (1 .	1 1	, ,	,		1
Net Total - 2005 Plan:	٠ .	- 8			\$			

Revised ES Form 2.10 Page 2 of 2

KENTUCKY UTILITIES COMPANY ENVIRONMENTAL SURCHARGE REPORT Plant, CWIP & Depreciation Expense

For the Month Ended:

(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)
	Eligible	Eligible	CWIP	Eligible Net	Unamortized	Deferred	Monthly	Monthly
Description	Plant In	Accumulated	Amount	Plant In	ITC	Tax Balance	Depreciation	Property Tax
	Service	Depreciation	Excluding	Service			Expense	Expense
			AFUDC		as of	as of		
					nnn/dd/yyyy	mm/dd/yyyy		
				(2)-(3)+(4)				
2006 Plan:								
Project 23 - TC2 AQCS Equipment	1		1	•	,	ŧ	1	1
Project 24 - Sorbent Injection	1	•	1	,	,	1	•	
Project 25 - Mercury Monitors	•	,	•	•	1	•	ı	•
Project 27 - E.W. Brown Electrostatic Precipitators	1	,	ı	•	,	•	•	ŧ
Subtotal	1	1	1	1	•	•	•	t
Less Retirements and Replacement resulting								
from implementation of 2006 Plan	•	1	•	•	•	•		,
Net Total - 2006 Plan:		-		S				
Net Total - All Plans:	· Se	5-	5.5	500	ا ا	54	· ·	,
					,	,	,	,

KENTUCKY UTILITIES COMPANY ENVIRONMENTAL SURCHARGE REPORT

Pollution Control - Operations & Maintenance Expenses For the Month Ended:

O&M Expense Account	E. W. Brown	Ghent	Green River	Tyrone	Total
2001 Plan					
506104 - NOx Operation Consumables					-
506105 - NOx Operation Labor and Other					1
512101 - NOx Maintenance					1
Total 2001 Plan O&M Expenses	\$				- \$
2005 Plan					
502006 - Scrubber Operations	-				-
512005 - Scrubber Maintenance	1				1
Total 2005 Plan O&M Expenses	\$ -				- \$
2006 Plan					
506109 - Sorbent Injection Operation		1			-
512102 - Sorbent Injection Maintenance		#			-
506110 - Mercury Monitors Operation	1	(E)	1	1	1
512103 - Mercury Monitors Maintenance			ŧ		Þ
Total 2006 Plan O&M Expenses	\$ -	-	- \$	- \$. \$

Current Month O&M Expense for All Plans