

could make Santee Cooper's compliance with new greenhouse gas controls exceedingly expensive.

- Escalating coal fuel costs. The cost of coal to fuel Santee Cooper's existing and proposed coal facilities is rising quickly and dramatically, and most analysts believe high prices are here to stay. Santee Cooper's traditional coal supplies for its plants come from a region of the country (Appalachia) where the price increases have been highest.

Across the nation, the cumulative financial risks related to new coal plant construction have caused concern in the investment community about future negative ratings for public power providers. Among other things federal officials have instituted a moratorium on a decades old lending program for new plants; investment banks have adopted new lending protocols; rating agencies have issued 'red flag' warnings; sponsors of plants or litigation has cancelled or postponed 60 proposed plants have been cancelled or delayed due to litigation or unilateral abandonment. Public service commissions in five states have turned down proposed coal plants, at least in part, because of the risks of higher construction costs and future federal regulation of CO₂ emissions.

It is important to understand this larger context of the mini-bond sale which is intended to provide Santee Cooper with funds to complete certain capital projects. The bond sale provides the Authority with only a small portion of its capital revenue, but the public disclosures that accompanying the solicitations inform a broad segment of its customer base, and the general population of South Carolina. Further, because target audience consists of smaller investors, with less access to information detailing the risks inherent in the Authority's planned capital projects – including the risks posed by increased construction costs, from greenhouse gas legislation – it is incumbent for Santee Cooper to 'go the extra mile' in its disclosing the risks it faces going forward.

The Authority has conducted a set of internal studies that have begun to offer a more complete picture of its carbon liability, how its finances will be affected and what options are available for further diversifying its fuel sources and strategies to address future demand for electricity. While these studies are limited in focus, further disclosure and analysis of this information as part of its solicitations would be a step to improved communication with investors and ratepayers. At present, however, Santee Cooper has yet to communicate these risks even as a strong national trend has emerged called for such disclosure.

Over the past year, investment banks, the nation's rating agencies, and most recently the New York State Attorney General have either proposed specific guidelines or called for more accurate disclosure of carbon risks by public and private corporations. While Santee Cooper has yet to "go public" with its internal analysis of carbon and cost risks, rating agencies have raised the issue. Standard and Poor's has expressed concern that "Santee Cooper's significant and increasing reliance" on coal-fired generation leaves it exposed to efforts to regulate emissions. Santee Cooper should bring its disclosures regarding carbon risk in alignment with emerging industry standards.

Background

On April 4, 2008, Santee Cooper released its 2008 Generation Resource Plan. The Authority serves 161,317 customers with 5517 MW of electrical capacity and an annual revenue base of \$1.5 billion. Currently, 80% of the Authority's electricity generation comes from coal-fired technology. The 2008

Generation Resource Plan represents the authority's ongoing updates to its energy planning in light of demographic, economic, technological and policy changes. The "GenPlan" combines discussions with stakeholders, a number of independent consultant reports and the use of energy planning models.

The planners have begun to recognize that Santee Cooper's energy needs and financial condition are developing in an environment of rising construction prices, an uncertain regulatory future for carbon emissions and a new global market raising the price of coal. The plan concludes there is a need for new base load generation to maintain a reliable supply of electricity for Santee Cooper customers. A central part of the plan is to construct two new coal fired plants to meet projected demand. The plan would add two 600 MW units by 2013 and 2017 respectively. As the planning discussion moves forward natural gas and new nuclear capacity are also seen as potential choices.

At the same time Santee Cooper is moving forward with its plan to build the two new coal units, the authority has announced a new round of public sales of mini-bonds. Mini-bond sales have been used in the past by the Authority to generate capital for important projects. The 2005 and 2006 bond campaigns raised \$15 and \$10 million respectively². The 2008 offering, like prior offerings, is limited to South Carolina residents or members of the cooperative. The bonds are sold in denominations of \$200.00, and an individual can purchase up to \$50,000.00. The bonds are Capital Appreciation Bonds. For these types of instruments, the investor receives no interest payments between the time the bond is purchased and its redemption, or maturity date. During the course of the investment the interest compounds. The interest income, when the Authority pays it to the investor, is tax exempt for federal and state purposes. Investment options allow for purchases based on 10, 15, and 20 year maturity dates.

According to the Authority, the purpose of the sale of mini-bonds is solely for the convenience of investors. The mini-bond offering provides an opportunity for small investors to take advantage of the returns offered by a state authority that provides electricity to the homes and businesses of South Carolinians.

Santee Cooper enjoys a strong credit rating from all three major credit rating agencies³. However, the rating agencies have also identified challenges that the Authority faces going forward. Most notably Standard and Poor's rating expressed concern that "Santee Cooper's significant and increasing reliance on coal-fired generation leaves it exposed to efforts to regulate emissions". This relates to compliance for new plants and whether recent capital outlays will be sufficient to achieve compliance with federal and state laws regulating mercury and sulfur dioxide on existing ones.⁴ Fitch and Moody's cite rising commodity prices and rate adjustments that have reduced Santee Cooper's competitive margins in the past. The Authority's long-term relationship with Central Electric Cooperative (a collection of 20 cooperatives) expires in 2023, prior to the repayment of a substantial amount of long-term debt. The relationship needs to be carefully monitored. Construction risk and the pressure from delays or rising construction and debt service costs could also pressure the Authority's credit rating. The rating agencies have noted that the Authority's large concentration of industrial class

² South Carolina Public Service Authority, *2007 Annual Report, Management Discussion and Analysis, Bond Market Transactions for Years 2007, 2006 and 2005*.

³ Fitch Ratings, *Fitch Rates Santee Cooper (South Carolina) Rev. Obligations, 2007 Series A, 'AA'*, July 12, 2007; Fitch Ratings, *South Carolina Public Service Authority (Santee Cooper)*, July 17, 2007; Moody's Investor Service, *Moody's Assigns Aa2 Credit Rating to South Carolina Public Service Authority Revenue Bonds, Outlook Is Stable*, July 3, 2007; Standard & Poor's, *South Carolina Public Service Authority, CP; Wholesale Electric*, July 16, 2007.

⁴ Standard & Poor's, *Op cit*, p.3-4.

customers leaves it vulnerable to economic slowdowns. Finally, challenges from environmental organizations may prevent the Authority from realizing its plans.

What the following analysis demonstrates is that the new mini-bond offering, unlike past ones, is taking place at a time when financial markets and public policies regarding coal-fired technology are changing. As a result, the Authority's plan to continue its heavy reliance on coal fired generation will present new financial risks. These risks are related to rising construction prices, an uncertain regulatory future and a new environment for coal, and together suggest that coal fired generation will be increasingly more expensive. The 2008 Generation Resource Plan update does not adequately assess the financial magnitude of these risks, and as such overstates the degree to which coal fired generation can be a viable choice for the next generation of new power capacity. These cost drivers will require the Authority to take on greater levels of debt than it currently anticipates to finance these new projects. These debt levels, plus any new liabilities that come with carbon regulations and rising commodity prices for coal will put future pressure on Authority budgets. How the Authority manages the cumulative financial impact of these risks suggests either a period of rising electricity rates for consumers, or diminished services. There is growing concern within the financial investment community that the confluence of these risks can lead to negative credit actions. The Authority should take steps in this round of mini-bond offerings, and all future financial and market disclosures, to more fully disclose and analyze its full range of liability, including carbon risk, so that South Carolinians, and the investment community at large, have a full picture of the challenges ahead.

A. Construction Costs of Coal Fired Power Plants Are Rising

Santee Cooper's 2008 Generation Resource Plan anticipates the addition of two new coal units – Pee Dee One and Pee Dee Two. Each plant will provide approximately 607 megawatts (MW) of electricity. The range of capital costs for new coal plants are projected by the Plan to be between \$1708 per kilowatt (kw) and \$1911 per kw – or approximately \$1.1 to \$1.2 billion per unit.

Santee Cooper's consultants and current market information demonstrate that these cost estimates for the construction of the plants are too low. The assumed range of \$1.1 to \$1.2 billion is significantly lower than current construction prices for comparable coal plants in other parts of the country.

A study⁵ released in July 2008 summarizes the current outlook for the production of coal -fired power plants.

Construction cost estimates for new coal-fired power plants are very uncertain and have increased significantly in recent years. The industry is using terms like “soaring”, “skyrocketing,” and “staggering” to describe the cost increases being experienced by coal plant construction projects. In fact, the estimated costs of building new coal plants have reached \$3,500 kw, without financing costs. This would mean a cost of well over \$2 billion for a new 600 MW coal plant when financing costs are included. These cost increases have been driven by worldwide competition for power plant design and construction resources, commodities, equipment and manufacturing capacity.....

⁵ Synapse Energy Economics, Inc., *Coal-Fired Power Plant Construction Costs*, July 2008.

Indeed, there is no reason to expect that the worldwide competition for resources or the existing supply constraints and bottlenecks affecting coal-fired plant construction costs will clear anytime in the foreseeable future....

The Virginia State Corporation Commission denied the request of Appalachian Power Company to build a coal-fired power plant in West Virginia. The Commission found that the proposal was neither “reasonable” nor “prudent”. In its order denying the request to build the new coal-fired power plant, the Virginia Commission also found that the Company’s cost estimate for the project was not credible and that the Company had not updated its cost estimate since November 2006. The Commission further noted that the Company (“APCo”) will not obtain actual or firm prices for components of the project until after receiving regulatory approval.

Recent coverage in the Wall Street Journal⁶ of an industry update on construction costs concludes with the following paragraph:

The analysis is of interest because it is difficult to get solid cost data until after plants have been built. Even then, data aren’t always available.

An analysis included with the 2008 Generation Resource Plan shows that one of Santee Cooper’s consultants, RW Beck, provided a broader range of likely construction costs of between \$1800-\$3500 per kw⁷. The Santee Cooper estimates are at the lower end of the Beck range. Beck’s upper range of \$3500 per kw figure is more reflective of current market conditions. For example, on September 15, 2008, Alliant Energy Services subsidiary Interstate Power and Light filed its quarterly update and raised its cost estimates on a 630 MW plant in Marshalltown, Iowa. The upper range of the new cost estimates is \$3700 per kw excluding the costs for funds used during construction⁸.

If the \$3500 per kw figure is used, each proposed unit will cost \$2.1 billion at current market prices for a total cost of \$4.2 billion. This is twice what the 2008 Generation Resource Plan models considered. Given this assumption, the Authority needs to reconsider whether, in fact, new coal generation is the best available choice for the next round of new power generation. In future planning studies the Authority should realign its models to reflect the significant rise in construction prices of new coal plants. Frequent reassessments of power plant construction costs estimates are essential in a volatile market.

B. Risks From Impending Carbon Regulation

Currently, 80% of Santee Cooper’s power generation comes from coal-fired plants.⁹ The plan to add 1,200 MW of new coal fired generation by 2017 means that Santee Cooper has decided to remain dependent on coal for decades. If the plan is implemented, Standard & Poor’s estimates that the Authority will provide 84% of its electricity from coal-fired plants.¹⁰ The 2008 Generation Resource Plan depicts the Authority as a committed steward of the environment as it handles the long-term pollution issues associated with coal plants, claiming that “eighty eight percent of Santee Cooper’s coal-fired generating units will have state of the art emissions control equipment by 2009”.¹¹

⁶ Smith, Rebecca, *Costs to Build Power Plants Pressure Rates*, Wall Street Journal, May 27, 2008.

⁷ Arsuaga, Paul, PE, and Szymankiewicz, RW Beck, *Comparison of Construction Costs*, Undated.

⁸ Alliant Energy Services (Interstate Power and Light, Co), *Form 8K – Report of Unscheduled Material Events or Corporate Events, Item 8.01 Events*, September 15, 2008.

⁹ South Carolina Public Service Authority, *Summary of the 2008 Generation Resource Plan*, April 4, 2008. p. 19.

¹⁰ Standard & Poor’s, *Op Cit*

¹¹ South Carolina Public Service Authority, *Summary of the 2008 Generation Resource Plan*, Op Cit, p. 46.

However, these state of the art pollution control equipment will not limit or capture the emissions of the primary greenhouse gases from the Authority's coal-fired power plants, including the two proposed Pee Dee River units. Thus, the Authority's expanded reliance on coal creates a risk that new carbon rules will add even more to the expense of new generation. Industry experts have made it clear that current 'state of the art' technology is inadequate to the task of capturing and storing (also called sequestering) of CO₂ emissions from coal-fired power plants like the two proposed Pee Dee River units. For example, Jeffrey Immelt, the CEO of General Electric, says of current coal fired technology, "Today, on the power side, we're still selling the same basic coal-fired power plants we had when I arrived (26 years ago, language added). They're a little cleaner and more efficient, but basically the same model."¹²

Standard & Poor's has offered its view of how the financial conditions of public power entities will vary based on their respective carbon liability.

Customers of those utilities with higher levels of carbon intensity will be more exposed to rate increases than customers of utilities with lower carbon intensity. The magnitude of rate increases will depend on the level of carbon costs and the extent of management's commitment to the preservation of credit quality.¹³

Other investment analysts have developed methodologies for the quantification and analysis of carbon liabilities at an industry wide level, at the company specific and as a factor in understanding financial performance¹⁴. These models, developed largely for the private sector, provide important insights to assist investors and investment professionals better understand how companies are responding strategically to the need for long-term low carbon business plans.

The near certainty of coming carbon regulation reflects the reality that coal-fired power plants are the largest single emitters of greenhouse gas of any energy source. In Washington D.C., numerous bills to mitigate greenhouse gas emissions have been introduced in Congress over the past several years and have received bipartisan support and carbon control legislation is supported by both of the major party presidential candidates. Several studies have used these bills as the basis to project the impact of the new law on the cost and price of electricity.

A recent study¹⁵ summarizes the current literature on the issue:

Finally, there is no currently commercially available technology for post-combustion capture of carbon dioxide from coal-fired power plants. Moreover, it is estimated that such technology may not be commercially available until 2020 or 2030., if then. However, it is expected that the addition of carbon capture and sequestration technology will greatly increase the cost of generating power at coal-fired plants.

¹² Friedman, Thomas, *Hot, Flat and Crowded, Why We Need A Green Revolution – And How It Can Renew America*, New York, Farrar, Straus and Giroux, 2008.

¹³ Standard & Poor's, *The Cost of Carbon --- Credit Quality Implications for Public Power and Cooperative Utilities*, March 27, 2008, p.5.

¹⁴ Innovest, *Carbon Beta and Equity Performance: An Empirical Analysis*, October 2007; Innovest, *Dynegy: Carbon Risk Accompanies LS Power Merger*, March 2007.

¹⁵ Synapse, *Construction Costs*, Op Cit, July 2008.

The studies estimate that the new regulatory programs will increase the cost of electricity from 60% to 80%. Depending upon the actual program that is adopted, both capital and operation budgets are likely to increase. There is no date certain regarding the passage of legislation. The high cost of carbon mitigation and the uncertainty of timing of any new law adds a high degree of speculation to any projections of coal plant costs.

Notably, Santee Cooper's own consultants have concluded that coal plant viability hinges on carbon regulation. "At a higher carbon cost estimate of \$20 per ton and adjusted for inflation, nuclear and CCGT (combined cycle gas turbine) become much more competitive. As carbon costs increases, nuclear becomes more competitive."¹⁶

In response to the growing risks of financing new coal plants, and the lack of any national policy, financial services and energy industry leaders worked together with environmental groups to develop a set of enhanced due diligence principles. On February 4, 2008, Citigroup, JP Morgan and Morgan Stanley announced the Carbon Principles. The principles are an enhancement of the due diligence process for energy lending. The principles embrace a portfolio approach to lending and ask prospective borrowers to disclose their programs for energy efficiency, renewables and steps to mitigate greenhouse gas as part of any review of a new coal fired plant. The banks stated:

The need for these Principles is driven by the risks faced by the power industry as utilities, independent producers, regulators, lenders and investors deal with the uncertainties around regional and national climate change policy."¹⁷

All participants in the process acknowledge that the Principles are a "first step" toward addressing financial risk related to climate change. And while the Principles cover projects sponsored by public and private investor owned utilities they contain the following language specific to public power projects:

The signatories believe this process to be a "best practice" for public power entities, including, municipally-owned utilities, joint action agencies, state public power utilities and rural electric cooperatives, given that many if not all the same climate-related risks pertain to generation projects financed by these entities. Therefore they will encourage these entities to undergo the full review including evaluating the financial sensitivity of plants proposed by such clients to the full costs of mitigating their CO2 emissions. Within six months of adopting the Principles, the Financial Institutions will work with these entities and environmental stakeholders to determine the appropriate enhanced diligence process for public power investments.¹⁸

It is unclear what direction investment banks may take regarding public power projects and how they will underwrite them in the future. It is clear however, that the financial and political landscape is changing dramatically with respect to decisions about power generation options for the future. In this new landscape, coal-fired power plants are becoming more expensive and more financially risky. This risk extends both to private and public power projects.

¹⁶ Axelrod, Howard, *Energy Strategies*, Undated document accompanying Santee Cooper 2008 Resource Plan, p.7.

¹⁷ Citigroup Press Release, *Leading Wall Street Banks Establish the Carbon Principles*, February 4, 2008.

¹⁸ *Carbon Principles*, Op Cit, p. 3.

Earlier this year, both New York City Comptroller William Thompson and California State Treasurer William Lockyer wrote to the Treasury Department to ask for a review of policies that allow tax-exempt financing for coal-fired generation. Each of these public officials are responsible for large bond portfolios and were concerned that the risks related to new coal generation were not being adequately considered by those public authorities seeking to build new coal fired power plants.

The Carbon Principles, and other energy planning models designed to address carbon risk, encourage energy planning models that increase energy efficiency initiatives, demand response programs and renewable energy prior to accepting new coal fired generation as an acceptable response. The 2008 Generation Resource Plan does not provide a comprehensive review of the types of programs and their impact on the need for electricity.

The Plan states:

Current and future DSM programs were not evaluated in the plan, but are separately evaluated on an individual case-by-case basis. The impacts of the projected participation in existing and potential future programs were considered when developing the 2008 Generation Plan.¹⁹

The lack of clear quantification of all of the efficiency and renewable initiatives impairs the energy planning models used by Santee Cooper. Without solid data on these initiatives, projections of future demand may be overstated, and as such the need for new generation may too be overstated.

In addition, carbon risk is considered only in Santee Cooper's "sensitivity analyses". A sensitivity test injects a "what if" scenario into a core financial presentation. The limitation of this method is that it allows the carbon scenarios to effectively be set aside for the purposes of final decision-making. This means the likelihood and impact of new carbon rules are not fully factored into the Authority's financial planning. From an investment standpoint, it is not a matter of if these rules will be adopted, it is a matter of when and at what cost. If controls occur sooner, then the target costs can be integrated into planning models. If controls occur later, then business plans should fully account for this eventuality. The sensitivity test gives the appearance of accounting for the eventuality, but when it comes to the actual modeling used for decision making, the CO2 cost models are set aside.

The 2008 Generation Resource Plan concludes that: "in the majority of the sensitivities run, with the exception of those assuming moderate to high CO2 cost similar plan results were yielded."²⁰ (that coal is the most viable option, language added). The referenced "plan results" are the Plan's call for permitting both Pee Dee units and constructing the first for operation by 2013. In other words, the current conclusion that coal is the most viable choice for the next round of base load generation appears only to hold if there is little or no cost, associated with CO2 emissions over the life of the plant. This is unlikely. Thus Santee Cooper's plan to build new coal generation indicates that it has not adequately disclosed the risks of its plan to the public or investors. The current plan leaves the Authority poorly

¹⁹ South Carolina Public Service Authority, *Summary of the 2008 Generation Resource Plan*, April 4, 2008, p.44.

²⁰ South Carolina Public Service Authority, *Summary of the 2008 Generation Resource Plan*, April 4, 2008, p. 2.

positioned to address either new Congressional mandates on greenhouse gases, or any new future underwriting criteria that may emerge from the private sectors' own voluntary guidelines that comes out of the next round of Carbon Principles discussions.

One practical outcome could be future rate increases that may be explained to the public as 'surprises'. Standard & Poor's has identified such rate increases as a critical factor in how public power entities will fare in the future.

Preserving credit quality in the face of higher costs will hinge on the responses adopted by governing bodies that set rates for public power and electric cooperative utilities. Given that most U.S. public power and electric cooperative utilities have autonomous ratemaking authority, this latitude will be an important tool for managing added costs and preserving financial strength and credit quality.²¹

Regardless of whether Santee Cooper will in fact be able to exercise autonomous rate making authority in the future to offset "surprise" costs that were well known in advance, any exercise of that authority could greatly reduce public confidence in its managerial ability. Sound financial planning identifies challenges and strategies to address them early. In addition, full disclosure about future challenges is the method by which investors and customers are prepared to continue their partnership with the Authority.

C. The Cost of Coal is Rising

Coal Prices

Spot Market Pricing²²

Type	September 2007	September 2008	Pct. Change
CAPP	\$45.25	\$140.00	207%
NAPP	\$46.25	\$140.00	202%
Illinois Basin	\$32.50	\$ 83.00	154%

The fundamental justification for building coal fired power plants, has been that coal is cheap and abundant fuel and thus, helps keep the cost of electricity to consumers low.²³ With regard to the cost of coal, market changes are eroding its competitiveness. In some parts of the country rising coal prices (combined with the construction price increases and regulatory uncertainty) now make new natural gas plants competitive with new coal-fired facilities.

As explained above in detail, the electric generation industry is facing large cost increases on coal plant construction due to rising global demand, and, large future liabilities from new carbon emission rules. Coal fuel prices, added to these challenges, provide even greater reason for questioning the soundness of these investments.

²¹ Standard & Poor's, *The Cost of Carbon – Credit Quality Implications for Public Power and Cooperative Utilities*, March 27, 2008.

²² Energy Information Administration, *Weekly Coal Price Reports*, September 2007 and September 2008.

²³ See, Science Panel Finds Fault With Estimates of Coal Supply, *New York Times*, June 21, 2007 referencing National Academy of Sciences, "Research and Development to Support National Energy Policy June 2007. The report concludes that the U.S. might have a 100 year supply of coal at current usage rates, but that by 2030 the rate of coal consumption could be 70 percent higher than it is now. The data suggests that if that higher usage rate occurred, US coal supplies could be exhausted in less than 50 years, with significant price increases, as the supply becomes progressively constrained.

While there are clear differences among coal trading professionals and industry monitors as to the permanence of these high prices, there is consensus that prices are high. In the case of NAPP and CAPP coal, if per ton costs drop by even \$30 per ton, a new price floor has been created that remains considerably higher than prices of one year ago. The new floor is dramatically higher than the old one.

There are strong reasons to project that there is a new price floor to coal, and that it is likely to rise in the coming years. According to Peabody Energy, the demand pressures that are leading to these rising coal prices costs will continue for the next several decades.²⁴

The Energy Information Administration (EIA), Energy Outlook 2007²⁵ offers a picture of coal prices long-term that differs from that being offered by the coal industry. The EIA states: “Coal prices to the electric power sector remain relatively low, peaking at \$1.71 per million BTU in 2010, falling to \$1.69 per million BTU in 2018, and remaining at that level through 2030.” Its projections have been called into question by a recent study by the Western Resources Advocates.²⁶

Inherent in the risk associated with fuel price changes is the inability to reliably project future fossil fuel prices. The Energy Information Administration conducted a review of its forecasts and found that, for long-term forecasts made from 1982 through 2006, the average absolute error (comparing forecasted prices and actual prices) for coal prices paid by electrical generating plants was about 47% and that natural gas wellhead prices was about 64% --- both enormous forecasting errors.

Significantly, the highest new price floors are occurring in those regional coal markets that have served coal fired generation in South Carolina. Historically the State’s coal fired generation has relied upon coal from Kentucky, Pennsylvania, West Virginia (Central Appalachian and Northern Appalachian), Tennessee²⁷ – coal producing areas where the price of coal is rising at the fastest pace and where export demand is expected to place continued pressure for the foreseeable future.²⁸

And utilities in the southeast are beginning to respond to the yearlong price increases by seeking higher rates. In fact, in South Carolina, several utilities have petitioned the Public Service Commission for significantly higher rates to offset rising coal prices.²⁹

Beyond price risk Santee Cooper should disclose the potential for disruption in its operations due to its reliance on coal obtained through mountaintop removal. The risks associated with this extraction method stem from public policy changes and litigation.

²⁴ Vic Svec, Senior President for Investor Relations and Corporate Governance, Peabody Energy, *The New BTU*, Basic and Industrial Conference, June 3, 2008.

²⁵ Energy Information Agency, 2007 Energy Outlook: *Fuel Costs Drop from Recent Highs, then Increase Gradually*.

²⁶ Western Resources Advocates, *A Clean Electric Strategy for Arizona*, February 7, 2008. The study referred to is Energy Information Administration, *Annual Energy Outlook Retrospective Evaluation of Projection in Past Edition*, (1982-2006), DOE/EIA-0640 (2006) 2007, Table 2.

²⁷ Energy Information Administration, *Domestic Distribution of U.S. Coal to Origin State, Consumer, Destination, Method of Transportation, South Carolina, 2006*. Distribution data for 2006 shows state importation of 18.8 million tons for electricity generation. Kentucky imports about 70% with the rest coming from Pennsylvania, Tennessee and the Virginias.

²⁸ Consol Energy, *Merrill Lynch Global Metals, Mining and Steel Conference*, Key Biscayne, Florida, May 14, 2008. Consols export projections rise from 57 million tons in 2007 to 84 million in 2009. The demand pressure positions the company to capitalize on higher prices. See slides: 20 and 22 from the presentation.

²⁹ Associated Press, *Duke eyes 6 percent rate increase for SC homes*, The State.com, September 16, 2008 and Wilen, John, *Coal price hikes are pushing up electricity rates*, Post and Courier Charleston.com, May 4, 2008.

"I personally have an ethical problem with the coal that we're using now," said City Commissioner Lauren Poe. "There are a mass of externalities associated with (mountain top mining) in both the environmental cost and social costs. As we're able to transition away from that coal there are costs that we will be avoiding that don't necessarily show up in the bottom line of our GRU budget every year."

Karen Alford, who handles energy supply, said that a portion of the coal GRU receives from the mountain range predominately located in Kentucky, Virginia and Tennessee is mountain top removal coal.

Commissioner Craig Lowe said he was surprised to hear that some of GRU's coal was mountain top removal given assurances from previous GRU leadership that it was not.

"That is a very devastating process for the environment where we are getting the coal from," Lowe said.³⁰

Market impacts from successful litigation to block new mining in the areas where Santee Cooper power plants purchase their coal creates a problematic set of choices. An article in the *Houston Chronicle*³¹ illustrates some of the financial risks:

NEW YORK — A Friedman Billings Ramsey analyst upgraded shares of Peabody Energy Corp. on Monday, saying a judge's ruling blocking permits for a rival to mine coal in Central Appalachia will drive coal prices higher.

Last month, U.S. District Judge Robert Chambers revoked four permits that allowed Massey Energy Co. to mine coal from mountaintops in Central Appalachia. The judge ruled the engineers that studied the sites failed to prove the mines wouldn't harm the environment.

Last week, the judge blocked two new permits on the same basis.

Friedman Billings Ramsey analyst David M. Khani said the blocked permits add to a union strike, a mine closure and a severe blizzard that forced a work stoppage last month as factors that will propel coal prices.

Khani upgraded Peabody Energy to "Outperform" from "Market Perform." He said if there is less coal production in Central Appalachia, buyers will turn to coal from other sources, such as the Powder River Basin.

He raised his price target on the St. Louis, Mo.-based coal miner's stock to \$70 from \$68.

The impact of litigation on coal prices in West Virginia, Virginia, Kentucky and Tennessee can result in permit denials that prevent or slowdown an expansion in the supply of coal. As demand stays steady, or increases due to export pressure, prices rise. In addition, new environmental mitigation strategies that grow out of litigation increases the cost of mining, placing further upward pressure on coal prices.

Santee Cooper forecasts coal prices in the range of \$40 to \$60 per ton between 2008 and 2013. However, the price of coal is likely to be as much as 60% higher than the Authority's current estimates. Current future price curves for coal from the region are projecting coal prices of at least \$100 per ton and higher through 2011.³²

³⁰ Gainesville Sun, GRU (*Gainesville Regional Utilities*) grilled over practices at coal mines, July 14, 2008. See also: Warrick, Joby, *Appalachia Is Paying Price for White House Rule Change*, April 17, 2004.

³¹ *Ahead of the Bell: Peabody Energy*, *Houston Chronicle*, April 9, 2007.

³² Coal and Energy Report, September 19, 2008.

Over the last twenty years the price of coal remained relatively stable. This is no longer the case. Given important changes in global markets and the reaction of U.S. domestic producers the last year has seen a permanent change in the price of coal. Like the problems posed by the rising construction price environment, estimations for the future price of coal have become more difficult and speculative as markets change.

C. Cumulative Financial Risk

When several cost factors are moving in the wrong direction at the same time, investors and investment analysts begin to question its viability. Standard & Poor's and Moody's have identified this problem of cumulative risk in their assessments of the future of coal fired new generation. The rating agencies' framework for discussing credit risk centers on regulated utilities; however, the economic dynamics of cumulative risk pose an equal set of challenges to public power agencies.

Moody's³³:

Rising concerns about the causes and consequences of climate change will carry major implications for the U.S. electric utility sector. Potential new limits on emissions of greenhouse gases, primarily carbon dioxide, are likely in the next several years. New rules are likely to force the industry to spend billions of dollars on compliance. The timing and form of any federal legislation that would establish these caps is unknown.

Future costs related to greenhouse gases would come on top of significant capital many utilities are already investing to reduce emissions of mercury, nitrogen oxide and sulfur dioxide.....

Given the magnitude of these potential nondiscretionary environmental-related costs and the fact that electricity prices are rising throughout the country, electric utilities could face a daunting challenge in obtaining timely recovery of these costs through their respective rate-setting authorities. While Moody's believes that most commissions are likely to grant timely recovery of prudently incurred mandated environmental costs, the resulting increase in electricity prices may make recovery of other operating costs and capital investments more challenging. Such a scenario could cause negative rating actions within the sector."

Standard & Poor's³⁴

"Among the risks are that CO2 compliance costs could spiral out of control, those costs could be up for rate recovery at the same time that other expenses are rising, and the costs could then get "crowded out" if regulators try to ease customer rate shock. Any disallowance would not necessarily be explicit, since it is difficult and legally suspect to keep prudent, legislatively mandated costs out of rates. The real risk to credit quality is the prospect that CO2 compliance costs will be the proverbial straw that leads to harsh regulatory responses such as a disallowance or deferral because of cost pressures tied to commodity prices, more capital spending for basic reliability needs on the transmission and distribution system, and added construction costs for new generation to meet rising demand...Clearly, the pursuit of a cooler plant will leave utilities sweating over the risk to their credit quality."

Sponsors of new plants withdrew or suspended development plants on 67 plants over the last few years. Approximately one hundred additional new plants are in various states of development.³⁵

³³ Moody's Investor Service, *The Cost of Climate Change*, Corporate Finance—Special Comment, February 2008.

³⁴ Standard & Poor's, *The Credit Cost of Going Green for U.S. Utilities*, Credit Week Special, March 19 2008.

³⁵ www.sierraclub.org/environmentallaw/coal/plantlist.asp

Mr. Bruce Williamson, the CEO of LS Dynegy (the corporate sponsor of six new coal fired plants in the United States), recently told its shareholders,

Very few coal plants will break ground in the next several years unless they have already started construction, have an EPC contract or equipment committed to them...New investment for generation has been sidelined.³⁶

On February 19, 2008, the United States Department of Agriculture, Rural Utility Services (RUS), a federal agency that has provided subsidized loan for the creation of new power generation in rural America for over 60 years, instituted a moratorium on funding new coal-fired power generation.

The RUS Administrator informed the General Manager of Southern Montana Electric Cooperative, Inc., an applicant for a new coal plant, that it could not move forward with the Highwood Generation Station project. The letter to the cooperative discussed the general issues facing RUS including the rising costs of construction, and informed the cooperative that no further baseload generation loans would be forthcoming at least through 2009. The letter states:

I have been closely and carefully monitoring the developments with the proposed Highwood Generation Station. The inherent risks associated with compounded delays make the situation more problematic as well as increasing the cost of the plant which will be passed on in the form of higher member rates raise concerns about financial feasibility

Additionally, as you know, the Agency is precluded from financing base load generation plants in Fiscal Year 2008 and I suspect that will be the situation in Fiscal year 2009. Costs will continue to increase throughout this period.

With all the facts considered: No base load generation loans probably through 2009; continued cost increases further exacerbated by the added time to reach loan approval; the feasibility of the project with extra time and additional cost; and the uncertainty of the litigation now filed compels me to inform you the Agency will not be able to finance the proposed Highwood Station Plant.

Add to the above facts concern exists that approximately 40 percent of Southern Montana's capacity in the proposed plant is not under contract through the entire term of the proposed financing from the Agency.

Disclosure of this application denial and the larger issue of an effective moratorium on new lending have prompted press attention.³⁷ The Washington Post article states:

Though the last loan for a generating plant was made in 2006, rural cooperatives have applied for \$1.2 billion in loans to cover all or part of four more coal-fired plants, including controversial ones in eastern Kentucky and southern Illinois. Two other cooperatives recently shelved their projects and withdrew their RUS loan applications. And last month the RUS informed the Southern Montana Electric Generation and Transmission Cooperative that the agency was rejecting its application for a coal plant loan, citing new agency policy, rising construction costs and the lack of customers for much of the proposed plant's output.....

³⁶ Reuters News Service, May 14, 2008.

³⁷ Mufson, Steven, *Government Suspends Lending for Coal Plants: Risks Cited to Economy, Environment*, Washington Post, March 13, 2008. See also. Karl Puckett, *Rural Utilities explains funding pullout and Coal-fired power plant projects feel heat from rising costs, environmental concerns*, Great Falls Tribune, March 4 and 13, 2008, respectively.

The RUS administrator, James M. Andrew, said in the letter that it “is not funding loans for new base load generators until the Agency and the Office of Management and Budget can develop a subsidy rate to reflect the risks associate with the construction of new base load generation plants.”

An RUS spokesman would not say when the OMB closed the lending window for baseload plants; the agency gave no hint of the policy change until its letter to Southern Montana Electric on February 19.

The agency also conceded yesterday that it had not considered potential costs that could result from climate-change legislation that most commercial banks, utilities and other businesses consider when considering energy projects. “Since there is no clear consensus on what emission standards will be enacted and associated costs, attempting to make decisions on loans absent a factual base is speculative at best,” Andrew said.

.....A budget expert who asked not to be identified to protect his relationship with clients noted that the RUS was also glossing over the difficulty of passing costs along. Power generation co-ops are separate from distribution co-ops, which in the past have forced some generators into bankruptcy, rather than pass along higher costs.

The cumulative impact of these financial risks weakens the ability of underwriters and energy planners to gather and supply reliable data to make decisions. The Rural Utility Services has financed coal plant and other rural electrification projects for over 60 years. It has decided that the market is too volatile to continue making loans. The agency decided that underwriting information is too speculative, and the deals too risky, to invest anymore taxpayer dollars. Santee Cooper, as a public power entity with independent ratemaking authority, has access to tax-exempt financing. This is another way that the federal government subsidizes public power. While the nature of the two subsidies are somewhat different --- RUS financing and tax exempt financing – similar standards of prudence and diligence are required. If Santee Cooper moves forward with its two new coal plants it needs to provide a strong financial rationale in the face of these daunting market conditions.

The Mini-Bond Campaign and Carbon Disclosure

While the form and level of carbon costs remain undefined, compliance costs will have a greater impact on highly coal-dependent utilities than on utilities that rely more heavily on nuclear generation, hydroelectric resources, and natural gas to produce electricity. Therefore, coal-dependent utilities will need to do the most work to preserve credit quality.³⁸

Santee Cooper’s campaign to promote mini-bonds affords South Carolinians with modest means the opportunity to participate in an investment that promises between a 3.5% and 4.8% tax-exempt return. The bond proceeds are used by the authority to carry out certain capital improvements. The \$10 to \$15 million the Authority will derive from the sale is quite small in comparison to Santee Cooper’s outstanding debt portfolio of \$3.4 billion.³⁹

However, the size of the bond sale is secondary to the broad public dissemination that is involved. The public relations effort brings awareness to the Authority’s existence and long-term relationship with the residents and businesses of the State of South Carolina. The future solvency of the Authority is the essential guarantee being given to investors, and the public at large.

³⁸ Standard & Poor’s, *Op Cit*, p. 2.

³⁹ South Carolina Public Service Authority, *Preliminary Official Statement*, September 18, 2008, p. I-17.

Moreover, given that the Authority will be embarking on larger bond sales in the near future to raise large sums in the conventional bond market for new coal plants, the question of the long-term total carbon liability is very much a part of the Authority's financial future.

The Authority's Preliminary Official Statement released on September 19, 2008 contains the following statement with regard to future carbon liability:

Carbon Dioxide. Federal governmental entities are considering legislation that would modify the regulatory treatment of emissions of CO₂ and other greenhouse gases ("GHG") and the costs of operations relating to the mitigation or avoidance of these emissions. The Authority cannot predict with certainty that we will have the necessary technology to comply with any new regulation or law which seeks to control these emissions. Any regulation or law requiring some form of CO₂ controls or offsets may have material adverse effect on the Authority's operations and future financial performance in ways that we cannot currently predict. The Authority cannot predict whether or if any such legislation or regulations will become effective in the future and any effects on its operations or performance.

The Authority's statement is an inadequate disclosure and analysis of the risks of new carbon regulations. It offers no discussion of Santee Cooper's current or future carbon liability; seems to imply that the Authority can do little, if anything, to consider current legislative and regulatory proposals and weigh their relative impact on its financial operations; and offers no general or specific strategic planning to begin to mitigate the Authority's carbon liability. By generally adopting a passive stance toward the financial challenges of new carbon regulations, the Authority has poorly positioned itself, its investors and customers.

The carbon statement provides investors with no information regarding the Authority's own internal studies and carbon 'sensitivity analyses'. As shown above, those analyses reveal that under likely future scenarios the Authority should limit its commitment to coal fired technology in favor of a more diverse energy strategy. While the sensitivity analyses have their limitations, they have been performed by the Authority, and judgments have been made about the risks involved with future carbon regulation. The carbon statement needs further amplification to reflect the current carbon discussions and conclusions that appear in the 2008 Resource Plan and professional studies that accompany it.

Many tools exist in the marketplace for Santee Cooper to better analyze, report and minimize its carbon risk. For example, recently the New York State Attorney General signed an agreement with XCEL Energy Company that details a new direction in corporate carbon disclosure⁴⁰. The agreement, while binding on XCEL, offers a beginning for any organization in the public or private sector that will emit significant quantities of carbon into the earth's atmosphere. As noted by the investment banks who adopted the Carbon Principles mentioned above, the same risks exist for public or private organizations as long as they are emitting carbon.

⁴⁰ New York State Office of the Attorney General, *Cuomo Reaches Landmark Agreement with Major Energy Company, XCEL Energy to Require Disclosure of Financial Risks of Climate Change to Investors*, August 27, 2008.

The Attorney General's agreement results in the XCEL Energy Company providing additional analyses in its annual report at the Securities and Exchange Commission. Those areas that will be addressed are:

- Present and probable future climate regulation and legislation;
- Climate-change related litigation,
- Physical impacts of climate change.

The agreement also contains areas of additional disclosure regarding:

- Current carbon emissions
- Projected increases of carbon emissions from planned coal-fired power plants;
- Company strategies for reducing, offsetting, limiting or otherwise managing its global warming emissions.

The agreement underscores that new regional efforts to curb carbon emissions, enhanced due diligence protocols by private lenders, future federal regulatory and Congressional actions and litigation all pose financial risks for the company because of its current and future involvement in the production of electricity using coal-fired generation.

The Attorney General's press statement accompanying the announcement of the agreement states:

This landmark agreement sets a new industry-wide precedent that will force companies to disclose the true financial risk that climate change poses to their investors. Coal fired power plants can significantly contribute to global warming and investors have the right to know all the associated risks.

Particularly in context with the quantity and quality of disclosures required by the XCEL agreement, the marketing disclosures found on the Santee Cooper website offering the mini-bonds for sale to the public are clearly inadequate. Unlike prior mini-bond sales, the financial, environmental, regulatory and public policy climate has changed dramatically. How Santee Cooper manages these financial risks going into the future will very much determine how it provides electricity to South Carolinians, and what steps it will need to take to maintain its credit status as it negotiates these changes. Full disclosure and analysis of these risks can only enhance the quality of information to its investors, and prepare its customer base for the future.

As Standard & Poor's has stated:

The future cost of reducing emissions is highly uncertain for electric utilities, as is the impact on their credit quality. Depending upon their magnitude, carbon-related operating costs could erode financial margins, which could then impair utility credit ratings. Preserving credit quality in the face of higher costs will hinge on the responses adopted by governing bodies that set rates for public power and electric cooperative utilities. Given that, most U.S. public power and electric cooperative utilities have

autonomous ratemaking authority; this latitude will be an important tool for managing added costs and preserving financial strength and credit quality⁴¹.

Santee Cooper's mini-bond offering presents Santee Cooper the opportunity – and the responsibility – to provide its potential investors and the public at large the information necessary to assess the risk the Authority is undertaking by expanding its coal-heavy generation portfolio far into the future. To date, for the reasons stated above the materials Santee Cooper has provided in connection with the mini-bond offering have not met this standard. Santee Cooper should supplement its disclosures associated with the mini-bond sales as described in this report.

⁴¹ Standard & Poor's, *Op Cit*, p. 2.