2010

Integrated

Resource

Plan

SCE&G®
A SCANA COMPANY

Introduction

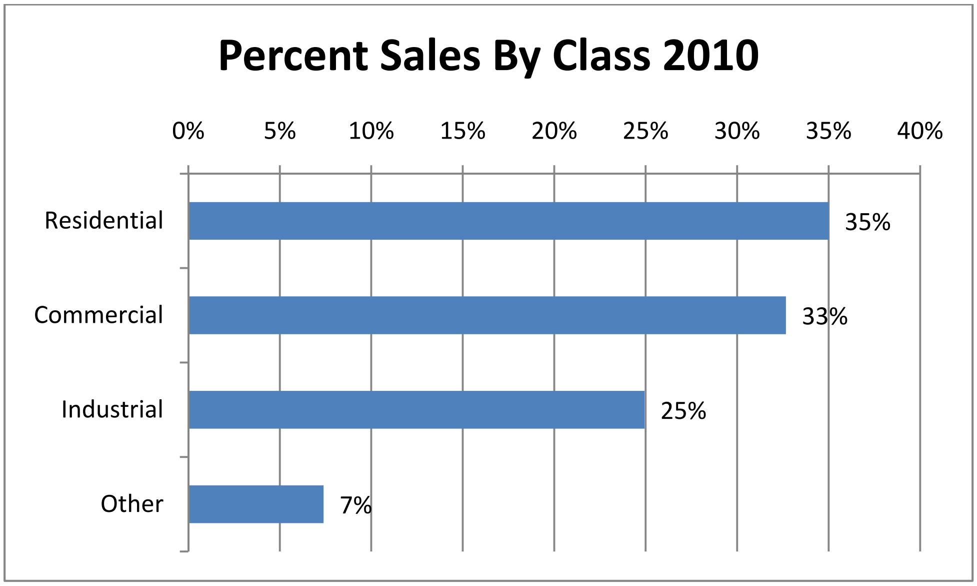
This document presents South Carolina Electric & Gas Company's ("SCE&G" or "Company") Integrated Resource Plan (IRP) for meeting the energy needs of its customers over the next fifteen years, 2010 through 2024. This document is filed with the Public Service Commission of South Carolina ("Commission") in accordance with S.C. Code Ann. §58-37-40 (1976, as amended) and Order No. 98-502 and also serves to satisfy the annual reporting requirements of the Utility Facility Siting and Environmental Protection Act, S.C. Code Ann. §58-33-430 (1976, as amended). The objective of the Company's IRP is to develop a resource plan that will provide reliable and economically priced energy to its customers.

I. The Load Forecast

Total territorial energy sales on the SCE&G system are expected to grow at an average rate of 1.5% per year over the next 15 years, while firm territorial summer peak demand and winter peak demand will increase at 1.8% and 1.6% per year, respectively, over this forecast horizon. The table below contains these projected loads.

	Summer Peak (MW)	Winter Peak (MW)	Energy Sales (GWH)
2010	4,752	4,119	22,871
2011	4,852	4,209	23,373
2012	4,948	4,216	23,505
2013	5,020	4,251	23,713
2014	5,089	4,289	23,837
2015	5,157	4,352	24,109
2016	5,241	4,430	24,453
2017	5,324	4,506	24,779
2018	5,406	4,586	25,105
2019	5,490	4,683	25,466
2020	5,614	4,772	25,940
2021	5,744	4,881	26,522
2022	5,871	4,988	27,093
2023	5,991	5,085	27,611
2024	6,105	5,179	28,114

The energy sales forecast for SCE&G is made for over 30 individual categories. The categories are subgroups of our seven classes of customers. The three primary customer classes - residential, commercial, and industrial - comprise about 93% of our sales. The following bar chart shows the relative contribution to territorial sales of each class in 2010.



The “other” classes are street lighting, other public authorities, municipalities and cooperatives.

The forecasting process can be divided into two parts: development of the baseline forecast, followed by adjustments for energy efficiency impacts. A detailed description of the short-range baseline forecasting process and statistical models is contained in Appendix A of this report. Short-range is defined as the next two years. Appendix B contains similar information for the long-range methodology. Long range is defined as beyond two years. Sales projections to each group are based on statistical and econometric models derived from historical relationships.

Energy Efficiency Adjustments

Several adjustments were made to the baseline projections to incorporate significant impacts not reflected in historical experience. These were increased air-conditioning and heat pump efficiency standards and improved lighting efficiencies, both mandated by federal law, and the addition of SCE&G’s new energy efficiency programs.

Since the baseline forecast is based on historical relationships between energy use and driver variables such as weather, economics, and customer behavior, it embodies changes which have occurred between them over time. For example, construction techniques which result in better insulated houses have had a dampening effect on energy use. Since this process happens with the addition of new houses and/or extensive home renovations, it occurs gradually. Over time this factor and others are captured in the forecast methodology. However, when significant events occur which will impact energy use but are not captured in the historical relationships, they must be accounted for outside the traditional model structure.

The first adjustment relates to federal mandates for air-conditioning units and heat pumps. In 2006, the minimum SEER (Seasonal Energy Efficiency Ratio) for newly manufactured appliances was raised from 10 to 13, which means that cooling loads for a house that replaced a 10 SEER unit with a 13 SEER unit would decrease by 30% assuming no change in other factors. The last mandated change to efficiencies like this took place in 1992, when the minimum SEER was raised from 8 to 10, a 25% increase in energy efficiency. Since then air-conditioner and heat pump manufacturers introduced much higher-efficiency units, and models are now available with SEERs up to 19. However, overall market production of heat pumps and air-conditioners is concentrated at the lower end of the SEER mandate, so the new ruling represented a significant change in energy use which would not be fully captured by statistical forecasting techniques based on historical relationships. For this reason an adjustment to the baseline was warranted.

A second reduction was made to the baseline energy projections beginning in 2012 for savings related to lighting. Mandated federal efficiencies as a result of the Energy Independence and Security Act of 2007 will take effect that year, and be phased in through 2014. Standard incandescent light bulbs are inexpensive and provide good illumination, but they are extremely inefficient. Compact fluorescent light bulbs (CFLs) have become increasingly popular over the past several years as substitutes. They last much longer and generally use about one-fourth the energy as that of standard light bulbs. However, CFLs are more expensive and still have some unpopular lighting characteristics, so their large-scale use as a result of market forces was not guaranteed. The new mandates will not force a complete switchover to CFLs, but they will impose efficiency standards that can only be met by them or newly developed high-efficiency incandescent light bulbs. Again, this shift in lighting represents a change in energy use which was not present in the historic data.

The final adjustment to the baseline forecast was to account for SCE&G's new set of energy efficiency programs. These energy efficiency programs along with the others in SCE&G's existing DSM portfolio are discussed later in this report.

The following table shows the baseline projection and the energy efficiency adjustments and the resulting forecast of territorial energy sales.

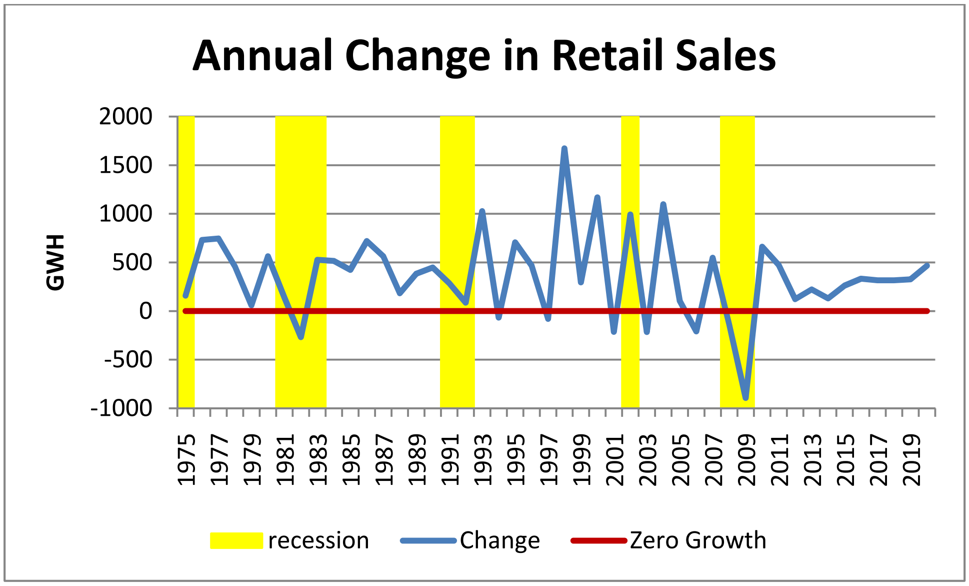
		Energy Efficiency			
	Baseline Sales (GWH)	SCE&G Programs (GWH)	Federal Mandates (GWH)	Total EE Impact (GWH)	Territorial Sales (GWH)
2010	22,974	-103	0	-103	22,871
2011	23,598	-225	0	-225	23,373
2012	24,281	-263	-513	-776	23,505
2013	24,834	-377	-743	-1,120	23,713
2014	25,300	-508	-955	-1,463	23,837
2015	25,741	-627	-1,005	-1,632	24,109
2016	26,276	-765	-1,059	-1,824	24,453
2017	26,815	-924	-1,112	-2,036	24,779
2018	27,377	-1,105	-1,167	-2,272	25,105
2019	27,974	-1,285	-1,223	-2,508	25,466
2020	28,598	-1,285	-1,373	-2,658	25,940
2021	29,241	-1,285	-1,434	-2,719	26,522
2022	29,874	-1,285	-1,495	-2,780	27,093
2023	30,451	-1,285	-1,555	-2,840	27,611
2024	31,014	-1,285	-1,615	-2,900	28,114

Baseline sales are projected to grow at the rate of 2.2% per year. The impact of energy efficiency, both from SCE&G's DSM programs and from federal mandates, causes the ultimate territorial sales growth to fall to 1.5% per year as reported earlier.

The forecast of summer peak demand is developed using a load factor methodology. Load factors for each class of customer are associated with the corresponding forecasted energy to project a contribution to summer peak. The winter peak demand is projected through its correlation with annual energy sales and winter degree-day departures from normal. By industry convention, the winter period is assumed to follow the summer period.

Response of SCE&G Sales in Previous Recessions

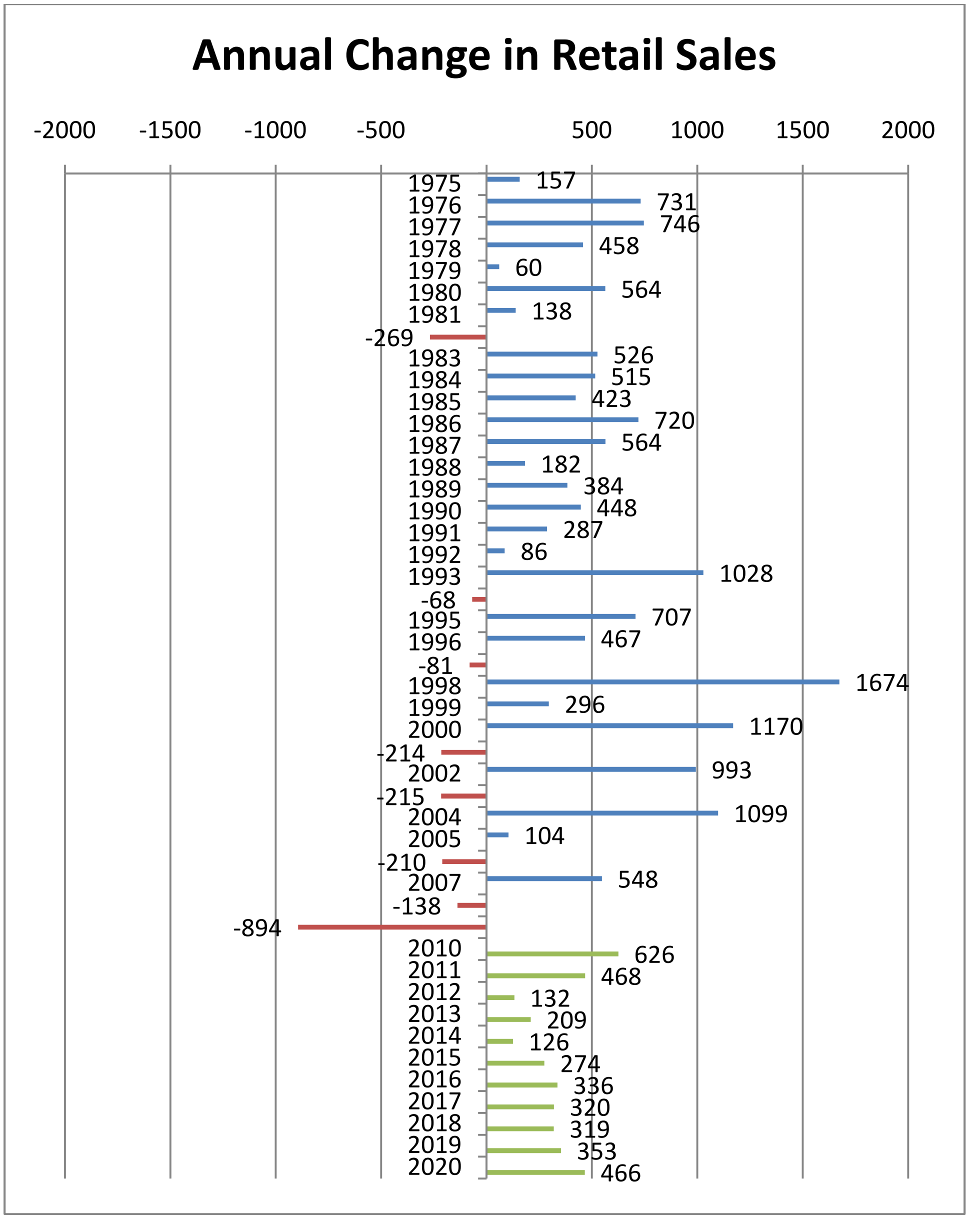
The economy is suffering from the effects of the serious recession which began in December of 2007. While many economists believe this recession ended in the third quarter of 2009, the official date has not been determined. Regardless of the specific timing, the recession has negatively impacted retail sales and its effect has been greater than that seen in previous recessions. The following chart shows the annual change in retail sales over the past 30 or so years along with the Company's current forecast. The approximate timing of past recessions is indicated. Values above zero indicate overall growth, while negative results indicate a decline in sales.



There are several key conclusions to be drawn from this chart:

1. Overall SCE&G has seen consistent growth on its system with a few years of minimal decline with the exception of 2009 in which the system experienced a significant decline as a result of the severe recession.
2. Growth in sales shows a rebound after each recession.
3. The forecast shows a modest rebound after the current recession with continued growth at a moderate rate compared to past experience.

The following chart shows the annual changes in retail sales in more detail with data labels added to the chart. Two points seem obvious from an inspection of this chart: first, the 2009 recession has had a more negative impact on sales than the Company has seen in the past 30 or so years and second, the projected growth is very modest compared to historical experience. While the projection may appear low, it is based on a great deal of detailed analysis as described above and in the appendices to this IRP.



The Company feels that the level of uncertainty about the future is particularly acute at the present time. There are several sources of uncertainty that should be mentioned:

1. The nation and SCE&G's service territory are coming out of a very deep recession. It is unclear among economists and others whether the recovery from the recession will be quick and robust or more prolonged taking perhaps several years to return to pre-recession levels.
2. Electric (and gas) customers throughout the country have implemented conservation measures to reduce their energy consumption and associated bills largely in response to economic conditions but also in response to a national consciousness of the issue. It is

unclear whether this will be a short-lived phenomenon or one that will become a more permanent aspect of customer behavior.

3. The federal government is channeling large sums of money to state and local governments to stimulate energy efficiency programs. The impact of the resulting programs is difficult to quantify.
4. SCE&G is implementing a new set of energy efficiency programs among its customer base providing information and monetary incentives to encourage customers to implement energy efficiency and conservation measures. The effectiveness of these programs depends on customer acceptance which is difficult to predict. The energy impacts in the short run and the persistence of these impacts in the long run provide a source of significant uncertainty.
5. In 1978 the National Energy Act was signed into U.S. law and began more than 30 years of programs and regulations to increase energy efficiency in the country. While these efforts certainly have done much good and the country is better off for them, the need for power nevertheless continued to grow. With this experience behind it, the Company looks to the future with uncertainty when it considers the proliferation of electronic devices such as large screen TVs and electric billboards and the possible development of a large market for plug-in hybrid vehicles.

Risk Analysis

Because of the uncertainty, it is particularly important to develop a high and low set of expectations. The nearby table shows the 15-year annual compound growth rate in sales that results from the base forecasting methodology for certain major classes of customer. The "base" growth rate is compared to the "high load" scenario and the "low load" scenario. The table also shows the historical growth in sales to these customer classes for the pre-recession period 1990-2005. The high load scenario also assumes that the impact of energy efficiency will be 50% of that reflected in the base forecast while for the low load scenario, it was assumed that

Assumptions For High and Low Scenarios

	15-Year Projection of Annual Growth			
	Base Forecast	High Load Scenario	Low Load Scenario	Pre-Recession History
Residential	2.2%	2.7%	1.5%	2.7%
Commercial	2.3%	2.6%	2.0%	3.2%
Industrial	1.8%	2.0%	1.5%	2.6%
Municipal	0.4%	1.5%	-8.9%	4.0%

the energy efficiency impact of SCE&G's new energy efficiency programs would be 25% more effective. If SCE&G's service territory recovers from this recession quickly and growth returns to more normal levels as experienced historically, then the high load scenario may be more reflective of SCE&G's future load growth. On the other hand, if the recovery from the recession is slow with long lasting effects and if SCE&G loses a large part of its wholesale business, then the low load scenario may be a better representation of future growth.

Load Impact of Energy Efficiency and Demand Response Programs

The Company's energy efficiency programs (EE) and its demand response programs (DR) will reduce the need for additional generating capacity on the system. The EE programs implemented by our customers should lower not only their overall energy needs but also their

Territorial Peak Demands (MWs)

		Energy Efficiency					
Year	**Baseline Trend**	**SCE&G Programs**	**Federal Mandates**	**Total EE Impact**	**System Peak Demand**	**Demand Response**	**Firm Peak Demand**
2010	4,972	-10	0	-10	4,962	-210	4,752
2011	5,085	-23	0	-23	5,062	-210	4,852
2012	5,216	-36	-22	-58	5,158	-210	4,948
2013	5,326	-52	-44	-96	5,230	-210	5,020
2014	5,429	-72	-58	-130	5,299	-210	5,089
2015	5,526	-93	-66	-159	5,367	-210	5,157
2016	5,642	-116	-75	-191	5,451	-210	5,241
2017	5,762	-143	-85	-228	5,534	-210	5,324
2018	5,884	-173	-95	-268	5,616	-210	5,406
2019	6,012	-207	-105	-312	5,700	-210	5,490
2020	6,149	-207	-118	-325	5,824	-210	5,614
2021	6,289	-207	-128	-335	5,954	-210	5,744
2022	6,426	-207	-138	-345	6,081	-210	5,871
2023	6,556	-207	-148	-355	6,201	-210	5,991
2024	6,680	-207	-158	-365	6,315	-210	6,105

power needs during peak periods. The DR programs serve more directly as a substitute for peaking capacity. The Company has two DR programs: an interruptible program for large customers and a standby generator program. These programs represent 210 MWs on our system. The table below shows the impacts of EE from the Company's DSM programs and from federal mandates as well as the impact from the Company's DR programs on the firm peak demand projections.

Projected Firm Load Under High and Low Scenarios

The following table compares the territorial firm peak demand forecast under the low, base and high scenarios.

Firm Peak Demand Scenarios (MWs)					
Year	**Low Scenario**	**Delta**	**Base Scenario**	**Delta**	**High Scenario**
2010	4,752	0	4,752	5	4,757
2011	4,852	0	4,852	11	4,863
2012	4,769	-179	4,948	190	5,138
2013	4,631	-389	5,020	234	5,254
2014	4,682	-407	5,089	274	5,363
2015	4,732	-425	5,157	312	5,469
2016	4,795	-446	5,241	352	5,593
2017	4,857	-467	5,324	395	5,719
2018	4,917	-489	5,406	441	5,847
2019	4,978	-512	5,490	490	5,980
2020	5,077	-537	5,614	526	6,140
2021	5,180	-564	5,744	559	6,303
2022	5,281	-590	5,871	593	6,464
2023	5,378	-613	5,991	626	6,617
2024	5,469	-636	6,105	660	6,765

If SCE&G's territory recovers quickly from the current recession and growth comparable to pre-recession experience resumes, then the firm peak demand on the system will be more like that of the high scenario, adding as much as 660 MWs to the demand in 2024. On the other hand if the recovery is slow and protracted and SCE&G losses a large part of its wholesale business, then the peak demand is likely to be as much as 636 MWs less than its base plan.

II. Demand-Side Management at SCE&G

The Demand-Side Management Programs at SCE&G can be divided into three major categories: Customer Information Programs, Energy Conservation Programs, both existing and proposed, and Load Management Programs. The Customer Information Programs and Energy Conservation Programs can also be categorized as Energy Efficiency Programs while the Load Management Programs are also known as Demand Response Programs.

Customer Information Programs

SCE&G's customer information programs fall under two headings: the annual energy campaigns and the web-based information initiatives. Following is an overview of each.

1. **Annual Energy Campaigns:** In 2009, SCE&G continued to proactively educate its customers and create awareness on issues related to energy efficiency and conservation.

- **Customer Outreach Marketing and Communications:** SCE&G initiated an aggressive customer outreach initiative during spring 2009 to measure customer energy efficiency behaviors and to obtain feedback on the types of energy efficiency programs/services they would like to see the Company implement. Feedback was obtained through multiple channels to include an Outbound Telephone Survey, online at sceg.com and print surveys at community events held throughout the SCE&G service territory. The majority of feedback fell into three categories of interest: rebates/incentives, consumer education and in-home services, all three of which are covered within existing energy efficiency programs at SCE&G, as well as proposed new residential programs – pending approval by the Commission in 2010.
- **SCE&G/EnergyWise Blog:** Beginning in August 2009, SCE&G developed and implemented a blog (www.sceg.com/blog) for customers to learn more about energy efficiency programs/services offered by the Company. Topics of interest change weekly and have included a broad range of energy efficiency messaging, some of which include:
    - ➢ Easy home improvement projects you can tackle yourself to help save energy
    - ➢ New tax credits that could save you money on energy efficient upgrades to your home
    - ➢ Explaining how to use the Online Home Energy Audit tool
    - ➢ The best way to use a programmable thermostat for your lifestyle
    - ➢ The best ways to insulate your attic to save energy
    - ➢ SCE&G's In-Home Energy Consultations are a great way to learn how to save energy

- **Brand Advertising and Advertorials:** In response to customer feedback to help them find new ways to save energy, 2009 brand advertising (print and billboards) featured a member of the SCE&G Energy Team with drive-to-web at www.sceg.com for valuable energy savings information. In August, SCE&G initiated a monthly EnergyWise Advertorial featuring a Q&A on energy efficiency topics in The State Newspaper, the Post and Courier and the Aiken Standard. The Q&A's featured information on ENERGY STAR appliances, weatherization, in-home services, low-income customer assistance, programmable thermostats, and do-it-yourself energy efficiency ideas. Customers were encouraged to learn more and "join in the conversation" at www.sceg.com/blog.
- **2009 Fall Energy Savings Campaign:** Featuring members of SCE&G's Energy Team, the Company launched a six-week energy savings campaign in October (Energy Awareness Month), providing customers with a variety of energy savings tips and reminders about SCE&G special offers to include free in-home energy consultations and $300 bill credits for switching to high-efficiency, natural gas space heat or water heat. Also included was a reminder about federal tax credits available for qualified energy efficient home upgrades. Channels of communication included major daily newspapers and their respective web sites for The State Newspaper, the Post and Courier and the Aiken Standard. Weekly publications included SC Black News, The Charleston Chronicle, The Gullah Sentinel, The Carolina Panorama and The Community Times. The call-to-action for all print advertising included a drive-to-web for www.sceg.com/blog. In addition, a six-week, 60-second radio spot ran in Columbia (WTCB-FM, WLXC-FM, WOMG-FM) and Charleston (WXST-FM, WXLY-FM, WAVF-FM) – educating customers about common everyday household items that can waste energy. Additional radio promotions in Columbia aired on Clear Channel's WCOS AM/FM, WLTY FM, WNOK FM, WVOC AM and WXBT FM – with two 60-second testimonials for a three-week run with on air talent promoting SCE&G's energy efficiency programs and services. Radio advertising directed customers to www.sceg.com for additional information and resources.
- **SCE&G Business Offices (37 locations statewide):** Energy Savings promotions implemented in all business office locations through spring 2009, including distribution of "Top 10 Energy Savings Tips" via drive-through envelopes.

- **News Releases**: Distributed to print and broadcast media throughout SCE&G's service territory on a variety of energy savings programs and services to include Project SHARE and Weatherization. A campaign to promote the SCE&G Energy Team and the services they offer was conducted in the fall of 2009 and in conjunction with Energy Awareness Month (October). Numerous media outlets were invited to tag along on customer energy consultations to promote the service. Stories appeared in major print and broadcast media in both Charleston and Columbia.
- **Speakers Bureau –** Representatives from SCE&G made presentations on energy efficiency and conservation programs to several organizations in 2009 including church groups, senior citizen and low-income housing communities, civic organizations, builder groups and homeowner associations.
- **EnergyWise Newsletters (Print and new E-Newsletter):** Provides energy efficiency and conservation information for all customer classifications. The print version of the newsletter is mailed to approximately 625,000 residential customers twice annually, with 2009 editions being distributed during the winter/spring and fall seasons. In addition, we developed and e-mailed a new EnergyWise e-newsletter (based on customer demand/online requests for energy savings information) to approximately 1,000 residential customers in 4th Quarter 2009.
- **Television Advertising: Are You Smarter than a 5th Grader?™** sponsorship with FOX affiliates in Charleston and Columbia, South Carolina. SCE&G sponsored the "Brain Buster" segment of the nightly family game show. Local students delivered energy efficiency solutions via questions to over 800,000 households.
- **ENERGY STAR Partnership:** Throughout 2009, SCE&G continued to promote its partnership with ENERGY STAR (established in 2008), giving our Company permission to use their logo on appropriate marketing communications to our customers. Appropriate links to the ENERGY STAR web site are placed throughout our web site, giving our customers access to valuable energy savings information, tools and resources.

2. **Web-Based Information and Services Programs:** SCE&G's online offerings are broken into four components: the Energy Analyzer tool, the online Energy Audit tool, Customer Awareness Information and EnergyWise Blog/E-Newsletter. Altogether there have been more than 2.9 million visits to SCE&G's website in 2009 and feedback has been positive. Customers

must be registered to use the interactive tools: Energy Analyzer and Energy Audit. There are almost 245,656 customers registered for this access. Following is a description of these components:

- **Energy Analyzer:** Energy Analyzer, added in 2004, is a 24 month bill analysis tool. It uses complex analytics to identify a customer's seasonal usages and target the best ways to reduce demand. This Web-based tool allows customers to access their current and historical consumption data and compare their energy usage month-to-month and year-to-year -- noting trends, temperature impact and spikes in their consumption. There were a little over 100,000 visits to the Energy Analyzer tool in 2009.
- **Energy Audit:** The Energy Audit tool, added to the site in August 2008, leads customers through the process of creating a complete inventory of their home's insulation and appliance efficiency. The tool allows customers to see the energy and financial savings of upgrades before making an investment. There were 6,500 customers who used the Energy Audit tool in 2009.
- **Customer Awareness Information:** The SCE&G site supports all communication efforts to promote energy savings tips through a section of the website called "Save Energy & Money" and through the Energy Audit Library. Energy savings information includes how-to videos on insulation, thermostats and doors and windows. Information on the latest tax credits offered by the American Recovery and Reinvestment Act of 2009 is also available, including links to help customers explore and learn how they can take advantage of these credits. For business customers, online information also includes: power quality technical assistance, conversion assistance, new construction information, expert energy assistance and more (2009 traffic was greater than 20,000).
- **SCE&G EnergyWise Blog and E-Newsletter:** As noted in the Annual Energy Campaigns section, SCE&G's web-based information and services included development, implementation and ongoing management of two new tools/resources in 2009 – the Company's blog on energy efficiency at www.sceg.com/blog (2009 traffic from August launch through year-end was 3000) and an EnergyWise e-newsletter to support customer demand for additional information on ways to help them save energy.

Existing Energy Conservation Programs

There are four energy conservation programs: the Value Visit Program, the In-Home Energy Consultation, the Conservation Rate and our use of seasonal rate structures. A description of each follows:

1. The **Value Visit Program** is designed to assist residential electric customers who are considering an investment in upgrading their home's thermal efficiency. The customer is asked to complete a 1-page application and a visit is scheduled with an Energy Services Representative to verify what (if any) rebates the customer may qualify for. See rebate schedule below. During the visit, an SCE&G representative explains the benefits of upgrading different areas of the home and what effect upgrading these areas will have on energy bills and comfort levels. There is a $25 charge for the program, but this charge is reimbursed if the customer implements any suggested upgrade within 90 days of the visit. Information on this program is available on our website and by brochure.

   0 to R30 attic insulation - $6.00 per 100 sq. ft.
   R11 to R30 attic insulation - $3.00 per 100 sq. ft.
   Storm windows - $30.00 per house
   Duct insulation - $60.00 per house
   Wall Insulation - $80.00 per house

2. **In-Home Energy Consultation**: SCE&G's free In-Home Energy Consultation is designed for residential customers who want to be proactive in managing their energy consumption. An Energy Services Representative will walk through a customer's home, inspecting windows & doors, caulking, weather stripping, insulation levels, appliances, water heaters and HVAC devices and will assess the home's thermal efficiency. Information about this program is available on our website, through bill inserts, and through numerous media outlets (newspaper, television, internet, radio, etc.).

3. **Rate 6 Energy Saver / Energy Conservation Program**: The Rate 6 Energy Saver / Energy Conservation Program rewards homeowners and home builders who upgrade their existing homes or build their new homes to a high level of energy efficiency with a reduced electric rate. This reduced rate, combined with a significant reduction in energy usage, provides for considerable savings for our customers. Participation in the program is very easy as the requirements are prescriptive which is beneficial to all of our customers and trade allies. Homes built to this standard have improved comfort levels

and increased re-sale value over homes built to the minimum building code standards which is also a significant benefit to participants. Information on this program is available on our website and by brochure.

4. **Seasonal Rates**: Many of our rates are designed with components that vary by season. Energy provided in the peak usage season is charged a premium to encourage conservation and efficient use.

Proposed Energy Conservation Programs

In 2009 SCE&G completed a comprehensive evaluation of its portfolio of DSM programs with the specific intention of revitalizing its energy efficiency programs and introducing new DSM programs where appropriate. In June 2009, the Company presented its DSM portfolio to the Commission for review and approval. A Commission hearing is scheduled for April 1, 2010. Of the nine programs, seven target SCE&G's residential customer class and two target SCE&G's commercial and industrial customer classes. A description of each program follows:

1. **Residential Benchmarking** program will provide consumers with comparisons of their monthly energy consumption with benchmarks showing average energy consumption by similarly situated energy users. The monthly benchmarking information will be provided free of charge to customers who elect to participate in the program.
2. **Residential Energy Information Display** program will provide customers with an in-home display that shows information from the customer's meter regarding a home's current energy use and cost, and the use and cost to date for the month. The displays will be made available to customers at a discounted price.
3. **Residential Energy Check-up and Home Performance Audit** will encourage customers to have a specific assessment done of the energy efficiency of their homes. It will include two tiers of home energy review and assessment. As proposed, these programs will supersede SCE&G's existing Value Visit and In-Home Energy Consultation programs.
    - The **Tier 1** Review will entail a visual checkup and "check-off" audit performed by SCE&G staff at the customer's home. As a direct DSM benefit and as an incentive to customers to participate in the program, customers will be offered direct installation of simple measures, such as installation of compact fluorescent light bulbs ("CFL"), water heater wraps, and pipe wraps. There will be a $25

charge for the Tier 1 Review which will be credited to customers who accept the direct installation of simple DSM measures.

- The **Tier 2** Audit would go a step further and provide a comprehensive Home Performance Audit with diagnostic testing of the energy efficiency of the home by trained contractors. SCE&G will promote these audits by independent providers and will subsidize the cost of measures undertaken by customers based on the audits.

4. **Residential ENERGY STAR® Lighting and Appliances** program will provide residential customers with incentives for the purchase and installation of high-efficiency and ENERGY STAR® qualified products and appliances for a variety of applications, including high efficiency lighting fixtures and bulbs.
5. The **Residential New High Efficiency HVAC and Water Heater** program will provide incentives for high efficiency HVAC units and water heaters installed in new and existing homes.
6. The **Residential Existing HVAC Efficiency** program will provide residential customers with incentives for investing in efficiency tune-ups on their HVAC systems.
7. Customers and builders willing to commit to overall high standards of energy efficiency in new construction may receive incentives under the **Residential ENERGY STAR® New Homes** program. This program will provide incentives based on a comprehensive analysis of the energy efficiency of new homes reflecting both the construction techniques used and the appliances installed.
8. **Commercial and Industrial Prescriptive** program will provide incentives to non-residential customers to invest in the same sorts of high-efficiency lighting, fixtures and appliances as are being provided to residential customers, and will go beyond these to include things like high efficiency motors and other equipment. To ensure simplicity, the program will involve a master list of measures and incentive levels which will be easily accessible to commercial and industrial customers.
9. **Commercial and Industrial Custom** program will provide tailored incentives to commercial and industrial customers based on the calculated efficiency benefits of their particular energy efficiency plans or construction proposals. This program is intended to apply to technologies and applications that are more complex and customer-specific. All

aspects of these commercial and industrial programs will apply to both retrofit and new construction projects.

Load Management Programs

SCE&G's load management programs have as their primary goal the reduction of the need for additional generating capacity. There are four load management programs: Standby Generator Program, Interruptible Load Program, Real Time Pricing Rate and the Time of Use Rates. A description of each follows:

1. **Standby Generator Program:** The Standby Generator Program for retail customers was revamped in 2009 to serve as a load management tool. General guidelines authorize SCE&G to initiate a standby generator run request when reserve margins are stressed due to a temporary reduction in system generating capability or high customer demand. Through consumption avoidance, customers who own generators release capacity back to SCE&G where it is then used to satisfy system demand. Qualifying customers (able to defer a minimum of 200 kW) receive financial credits determined initially by recording the customer's demand during a load test. Future demand credits are based on what the customer actually delivers when SCE&G requests them to run their generator(s). This program allows customers to reduce their monthly operating costs, as well as earn a return on their generating equipment investment. There is also a wholesale standby generator program that is similar to the retail programs.
2. **Interruptible Load Program:** SCE&G has over 150 megawatts of interruptible customer load under contract. Participating customers receive a discount on their demand charges for shedding load when SCE&G is short of capacity.
3. **Real Time Pricing (RTP) Rate:** A number of customers receive power under our real time pricing rate. During peak usage periods throughout the year when capacity is low in the market, the RTP program sends a high price signal to participating customers which encourages conservation and load shifting. Of course during low usage periods, prices are lower.
4. **Time of Use Rates:** Our time of use rates contain higher charges during the peak usage periods of the day and discounted charges during off-peak periods. This encourages customers to conserve energy during peak periods and to shift energy consumption to off-peak periods. All our customers have the option of a time of use rate.

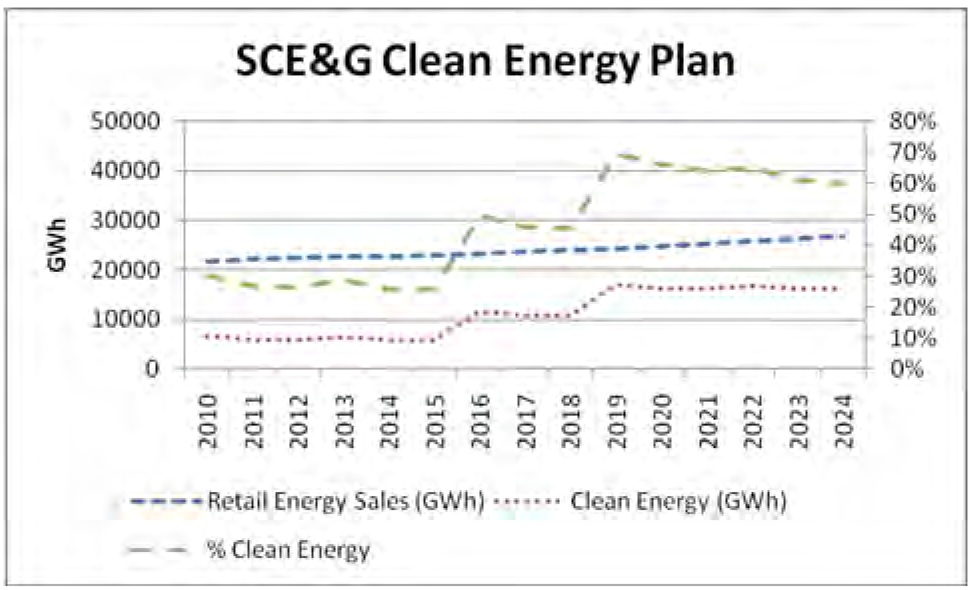
III. Clean Energy at SCE&G

Clean energy includes energy efficiency and clean energy supply options like nuclear power, hydro power, combined heat and power as well as renewable energy.

Existing Sources of Clean Energy

SCE&G is committed to generating more of its power from clean energy sources. This commitment is reflected: in the amount of current and projected generation coming from clean sources; in the certified renewable energy credits that the Company generates each year; in its net metering programs; and finally in its support for Palmetto Clean Energy, Inc. Following is a discussion of each of these topics.

1. **Current Generation:** SCE&G currently generates clean energy from hydro, nuclear, and biomass. The following chart shows the current and expected amounts of clean energy by GWh and as a percentage of retail sales.



As seen in the chart, SCE&G currently generates more than 30% of its retail sales from clean energy sources and by 2019 expects to generate about 70%.

2. **Renewable Energy Credits:** The SCE&G-owned electric generator, located at the KapStone Charleston Kraft LLC facility, generates electricity using a mixture of coal and biomass. KapStone Charleston Kraft, LLC, produces black liquor through its kraft pulping process and produces and purchases biomass fuels. These fuels which are used to produce renewable energy and the electricity generated qualify for Renewable Energy

Certificates as approved by Green-e Energy, a leading national independent certification and verification program for renewable energy administered by the Center for Resource Solutions, a nonprofit Company based in San Francisco, CA. Over the last three years we generated the following amounts of renewable energy from the Kapstone generator, formerly known as the Cogen South generator:

Year	MWH	% of Retail Sales
2007	371,573	1.7%
2008	369,780	1.7%
2009	351,614	1.7%

3. **Net Metering Rates and the PR-1 Rate:** Protecting the environment includes encouraging and helping our customers to take steps to do the same. Net metering provides a way for residential and commercial customers interested in generating their own renewable electricity to power their homes or businesses and sell the excess energy back to SCE&G. For residential customers, the generator output capacity cannot exceed the annual maximum household demand or 20KW, whichever is less. For small commercial customers, the generator output capacity cannot exceed the annual maximum demand of the business or 100KW, whichever is less. Under its PR-1 rate for qualifying facilities, the Company will pay the qualifying customer for any power generated and transmitted to the SCE&G system. The PR-1 rate reflects SCE&G's avoided costs.
4. **PaCE:** PaCE is an acronym for the Palmetto Clean Energy organization. PaCE is a non-profit, tax exempt organization formed by SCE&G, Duke Energy, Progress Energy, ORS and the SC Energy Office for the purpose of subsidizing renewable power in South Carolina. Customers make a tax deductible payment to PaCE and PaCE uses the funds collected to pay renewable generators a supplemental fee for their power.

Future Clean Energy

SCE&G is participating in activities whose goal is to advance renewable technologies in the future. Specifically the Company is involved with off-shore wind activities in the state, co-firing with biomass fuels, studying smart grid opportunities and distribution automation. Following is a discussion of each of these.

1. **Off-Shore Wind Activities:** SCE&G currently participates in the Regulatory Task Force for Coastal Clean Energy. This task force was established with a 2008 grant from the U.S. Department of Energy. The goal is to identify and overcome existing barriers for coastal clean energy development for wind, wave and tidal energy projects in South Carolina. Efforts include: an offshore wind transmission study; a wind, wave & ocean current study; and creation of a Regulatory Task Force. The mission of the Regulatory Task Force is to foster a regulatory environment conducive to wind, wave and tidal energy development in state waters. The Regulatory Task Force is comprised of state and federal regulatory and resource protection agencies, universities, private industry and utility companies.
2. **Co-firing with Biomass:** SCE&G is currently investigating the operational practicality as well as analyzing the economic and fuel supply variables associated with co-firing biomass in existing coal units. Co-firing of biomass fuel in our existing units represents an opportunity to include additional renewable fuels in our production mix without having to build new facilities or spend significant capital on existing facilities. In order to evaluate the operational issues of fuel handling of different types of biomass, the Company is setting up mobile fuel handling equipment which will facilitate the testing of biomass fuel in existing coal-fired boilers. The Company has also been meeting with biomass fuel sources to discuss the nature and availability of biomass feedstock. Samples have been obtained for laboratory analysis to compare the heat values and chemical properties of various types of biomass material. When the fuel handling equipment is operational, SCE&G will solicit material for test runs of different fuels. These tests will be used to benchmark unit performance at different levels of co-firing and identify any operational or environmental issues with the various fuels. Performance tests will also be used to help simulate the cost impact of using biomass fuels as an offset to fossil fuels.
3. **New Biomass Plants:** SCE&G has met with several companies that are considering building biomass facilities in South Carolina and wish to sell the power produced to SCE&G through a long term purchased power agreement. These companies seemed to be in the early stages of planning and their estimates of cost when available seemed high. SCE&G is very interested in new biomass facilities but the power has to be economical.
4. **Smart Grid Activities:** SCE&G currently has close to 10,000 electric meters that are not supported by our “drive by” AMR system. These meters are predominately located on

our medium to large commercial customers as well as our smaller industrial customers and must be manually read each month. We are currently evaluating technology that will allow us to have full two way communication with these meters. We feel that this capability is particularly important to this class of customer as it would allow real time outage notification and power quality monitoring as well as making load profile data available to the customer enabling better management of its energy consumption. This AMI system could also be selectively installed at other locations such as customer owned generation (net metering) allowing real time access to the status of the generator. It would also enable more sophisticated DSM offerings that may be attractive to a variety of customer classes.

5. **Distribution Automation:** SCE&G is continuing to expand the penetration of automated (SCADA) switching and other devices throughout the system. We will have over 600 SCADA switches and reclosers system wide by the end of 2010, most of which can detect system outages and operate automatically to minimize the number of affected customers. We are evaluating a system that will communicate the status of our capacitor banks to our operators. This would enable us to operate more efficiently, minimizing losses and prevent voltage fluctuations due to unnecessary capacitor switching. In order to fully utilize the new technology being deployed, we have also started a committee to look at upgrading our Outage Management System (OMS) to better synthesize the information coming back from our SCADA switches with other system operating information. Bringing this information together will enable us to operate the system in a more reliable and efficient manner.

Environmental Mitigation Activities

In March 2005, the United States Environmental Protection Agency ("EPA") issued a final rule known as the Clean Air Interstate Rule ("CAIR"). CAIR required that the District of Columbia and twenty-eight states, including South Carolina, reduce sulfur dioxide ("SO_2") and nitrogen oxide ("NOx") emissions in order to attain mandated air quality levels. CAIR established emission limits to be met in two phases beginning in 2009 and 2015 for NOx and 2010 and 2015 for SO_2. In addition, the EPA required some states to enact a State Implementation Plan designed to address air quality issues. The South Carolina State Implementation Plan (the "Plan") required, among other things, the reduction of SO_2 emissions from coal-fired generating facilities. The Plan also required a reduction in NOx emissions in the months of May through September until 2009 when the CAIR limits would become effective. CAIR and the Plan directly impacted SCE&G.

In order to reduce NOx emissions and to meet its compliance requirements, SCE&G installed Selective Catalytic Reduction ("SCR") equipment at its Cope Station in the fall of 2008. The SCR began full time operation on January 1, 2009 and has run well since that time. It is capable of reducing NOx emissions at the Cope Station by approximately 90%. SCE&G is also utilizing the existing SCRs at Williams and Wateree Station along with previously installed low NOx burners at the other coal fired units to meet the CAIR requirements.

Additionally, SCE&G has installed flue gas desulfurization (FGD) equipment, commonly known as wet scrubbers, at Wateree and Williams Station to reduce SO_2 emissions. The scrubber at Wateree was held up from final completion due to a lawsuit pertaining to the associated National Pollutant Discharge Elimination System (NPDES) and landfill permits. The Administrative Law Judge ruled in December 2009 in favor of SCE&G and work has resumed. This project will be commercial by August of this year, barring any further legal appeals. Expected scrubber SO_2 removal at Wateree should reach 95% or greater. The Williams Station scrubber has not been declared commercial yet but is operating at about 90% SO_2 removal. We are working with the scrubber contractors to tune the equipment to reach the 95% SO_2 removal specified in our contract. We are also working with a contractor to install equipment for a fuel additive that is expected to reduce SO_2, NOx and mercury at Urquart 3, Canadys, and McMeekin units. Testing will begin soon to measure potential reductions.

There will be some reduction in mercury as a result of the wet scrubber installations. We have not yet determined the removal efficiency of mercury at this time since the Williams scrubber is still being tuned and the Wateree scrubber is still under construction. The reductions in emissions resulting from the installation of the SCR's and the wet scrubbers will be a great benefit to the environment of South Carolina.

Potential Future Legislation

SCE&G is monitoring potential legislation being considered at the national level and the state level. Areas of particular activity involve CO_2 emissions, renewable power standards, coal ash and mercury. Below is a discussion of each.

1. **CO_2:** SCE&G is monitoring federal bills that may limit or cap CO_2 emissions. On June 26, 2009 the House of Representatives passed H.R. 2454, ‘‘American Clean Energy and Security Act of 2009.” H.R. 2454 would limit the emissions of CO_2 through a national cap and trade program that would reduce CO_2 emissions to 17% of the 2005 level by 2050. The senate also has a bill to regulate CO_2 through a cap and trade mechanism. The senate’s bill would also require that CO_2 be 17% below the 2005 level by 2050. On December 7, 2009 the Environmental Protection Agency formally declared that carbon dioxide from the burning of fossil fuels poses a threat to human health and welfare, a designation that set the federal government on the path toward regulating emissions from power plants, factories, automobiles and other major sources.
2. **Renewable Power :** SCE&G also continues to monitor the state and federal bills that, if enacted, will mandate a federal renewable portfolio standard (RPS). One of the primary purposes of a federal RPS is to increase the amount of clean energy produced in the U.S. H. R. 2454 requires 20% of utilities’ retail sales to come from renewable sources by year 2020. Qualified renewable sources include wind, solar, geothermal, biomass, qualified hydro-power, and marine and hydrokinetic renewable energy. The senate has similar bills that are still being considered. The most viable renewable energy source in SC is woody biomass. Off-shore wind energy and solar energy are available but are uneconomic today. SCE&G will follow the development of these technologies and will include them in its resource mix when appropriate. H.R. 2454 proposes the following renewable percentages:

Renewable Generation % of Retail Sales	
2012	6%
2014	9.5%
2016	13%
2018	16.6%
2020	20%

3. **Coal Ash:** The Environmental Protection Agency (EPA) is currently considering revisions to its regulation of coal ash. EPA has stated it is considering regulating coal combustion residue as hazardous waste.
4. **Mercury:** The Clean Air Act regulates 188 air toxics, also known as “hazardous air pollutants.” Mercury is one of these air toxics. The Act directs EPA to establish

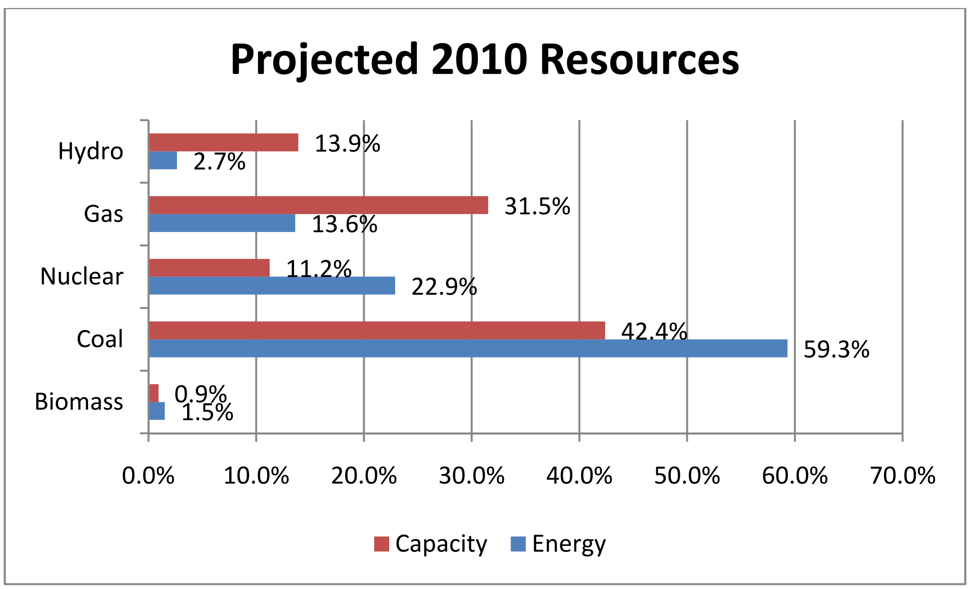
technology-based standards for certain sources that emit these air toxics. Those sources also are required to obtain Clean Air Act operating permits and to comply with all applicable emission standards. The law includes special provisions for dealing with air toxics emitted from utilities, giving EPA the authority to regulate power plant mercury emissions by establishing “performance standards” or “maximum achievable control technology” (MACT), whichever the Agency deems most appropriate. On March 15, 2005, EPA issued the Clean Air Mercury Rule, which creates performance standards and establishes permanent, declining caps on mercury emissions. The Clean Air Mercury Rule marks the first time EPA has ever regulated mercury emissions from coal-fired power plants.

IV. Supply Side of the IRP

Existing Supply Resources

SCE&G owns and operates ten (10) coal-fired fossil fuel units (2,404 MW), eight (8) combined cycle gas turbine/steam generator units (gas/oil fired, 1,326 MW), sixteen (16) peaking turbines (348 MW), four (4) hydroelectric generating plants (221 MW), and one Pumped Storage Facility (576 MW). In addition, we receive an output of 90 MW from a cogeneration facility. The total net non-nuclear summer generating capability rating of these facilities is 4,965 MW. These ratings are updated at least on an annual basis. When SCE&G's nuclear capacity (644 MW), a long term capacity purchase (25 MW) and additional capacity (22 MW) provided through a contract with the Southeastern Power Administration are added, SCE&G's total supply capacity is 5,656 MW. This is summarized in the table on the following page.

The bar chart below shows the projected 2010 relative energy generation and the relative capacity by fuel source. SCE&G typically generates the majority of its energy from coal and nuclear fuel.



Existing Long Term Supply Resources

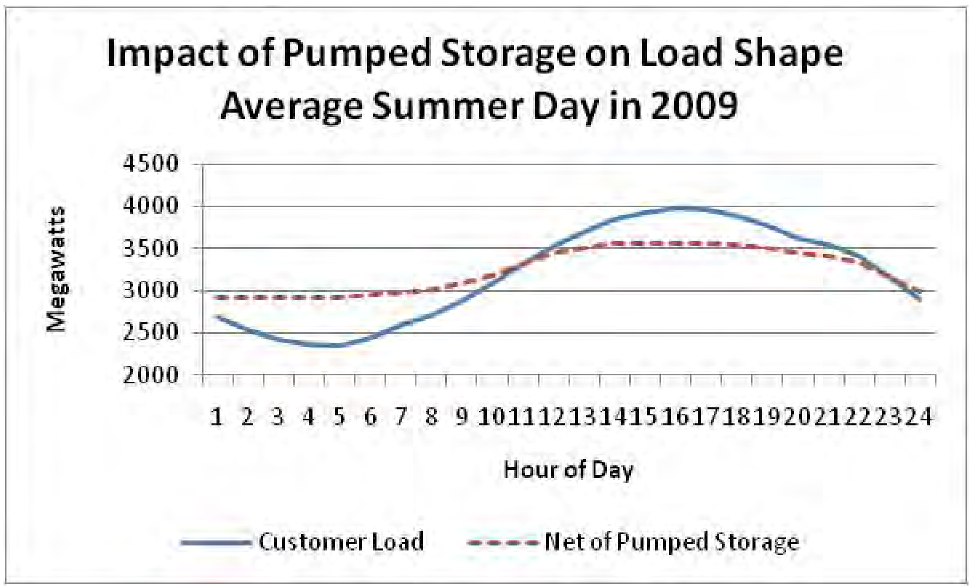
The following table shows the generating capacity that is available to SCE&G.

	In-Service Date	Summer (MW)
Coal-Fired Steam:		
Urquhart – Beech Island, SC	1953	95
McMeekin – Near Irmo, SC	1958	250
Canadys - Canadys, SC	1962	385
Wateree – Eastover, SC	1970	684
*Williams – Goose Creek, SC	1973	599
Cope - Cope, SC	1996	420
Cogen – Charleston, SC	1999	90
Total Coal-Fired Steam Capacity		2,523
Nuclear:		
V. C. Summer - Parr, SC	1984	644
I. C. Turbines:		
**Burton, SC	1961	0
**Faber Place – Charleston, SC	1961	0
Hardeeville, SC	1968	11
Urquhart – Beech Island, SC	1969	39
Coit – Columbia, SC	1969	28
Parr, SC	1970	60
Williams – Goose Creek, SC	1972	40
Hagood – Charleston, SC	1991	122
Urquhart No. 4 – Beech Island, SC	1999	48
Urquhart Combined Cycle – Beech Island, SC	2002	458
Jasper Combined Cycle – Jasper, SC	2004	868
Total I. C. Turbines Capacity		1,674
Hydro:		
Neal Shoals – Carlisle, SC	1905	2
Parr Shoals – Parr, SC	1914	7
Stevens Creek - Near Martinez, GA	1914	9
*Columbia Canal - Columbia, SC	1927	3
Saluda - Near Irmo, SC	1930	200
Fairfield Pumped Storage - Parr, SC	1978	576
Total Hydro Capacity		797
Other: Long-Term Purchases		25
SEPA		22
Grand Total:		5,685

* Williams Station is owned by GENCO, a wholly owned subsidiary of SCANA, and Columbia Canal is owned by the City of Columbia. This capacity is operated by SCE&G. ** Burton (27 MW) and Faber Place (8 MW) gas turbine units are currently in non-run status and will be unavailable indefinitely.

DSM From the Supply Side

SCE&G is able to achieve a DSM-like impact from the supply side using its Fairfield Pumped Storage Plant. The Company uses off-peak energy to pump water uphill into the Monticello Reservoir and then displaces on-peak generation by releasing the water and generating power. This accomplishes the same goal as many DSM programs, namely, shifting use to off peak periods and lowering demands during high cost, on-peak periods. The following graph shows the impact that Fairfield Pumped Storage had on a typical summer weekday during 2009.



In effect the Fairfield Pumped Storage Plant shaved about 380MWs from the daily peak times of 2:00pm through 6:00pm and moved almost 4% of customer's daily energy needs to the off peak. Because of this valuable supply side capability, a similar capability on the demand side, such as a time of use rate, would be less valuable on the SCE&G system than on many other utility systems.

Planning Reserve Margin and Operating Reserves

The Company provides for the reliability of its electric service by maintaining an adequate reserve margin of supply capacity. The appropriate level of reserve capacity for SCE&G is in the range of 12 to 18 percent of its firm peak demand. This range of reserves will allow SCE&G to have adequate daily operating reserves and to have reserves to cover two primary sources of risk: supply risk and demand risk. Mitigation of these two types of risk is discussed below.

Supply reserves are needed to balance the "supply risk" that some SCE&G generation capacity may be forced out of service or its capacity reduced on any particular day because of mechanical failures, wet coal problems, environmental limitations or other force majeure/unforeseen events. The amount of capacity forced-out or down-rated will vary from day to day. SCE&G's reserve margin range is designed to cover most of these days as well as the outage of any one of our generating units except the two largest: Summer Station and Williams Station.

Another component of reserve margin is the demand reserve. This is needed to cover "demand risk" related to unexpected increases in customer load above our peak demand forecast. This can be the result of extreme weather conditions or other unexpected affects.

The level of daily operating reserves required by the SCE&G system is dictated by operating agreements with other VACAR companies. VACAR is the organization of utilities serving customers in the Virginia-Carolinas region of the country who have entered into a reserve sharing agreement. It is a sub-region of the SERC Reliability Corporation, a nonprofit corporation responsible for promoting and improving the reliability of the bulk power transmission system in much of the southeastern United States. VACAR has set the region's reserve need at 150% of the largest unit in the region. While it can vary by a few megawatts each year, SCE&G's pro-rata share of this capacity is always around 200 megawatts.

By maintaining a reserve margin in the 12 to 18 percent range, the Company addresses the uncertainties related to load and to the availability of generation on its system. It also allows the Company to meet its VACAR obligation. SCE&G will monitor its reserve margin policy in light of the changing power markets and its system needs and will make changes to the policy as warranted.

Nuclear Capacity and Its Advantages

On May 30, 2008 SCE&G filed an application with the Public Service Commission of South Carolina requesting permission to construct and operate two nuclear units of 1,117 net MWs each. A hearing was held in December 2008 under Docket No. 2008-196-E and on February 11, 2009, the Commission voted to approve the Company's request. Subsequently the Commission issued Order No. 2009-104(A). Both units will have the Westinghouse AP1000 design and use passive safety systems to enhance the safety of the units. The first unit is expected to come online in 2016 and the second in 2019. SCE&G will own 55% of the units (614 MWs each) while Santee Cooper will own 45%. SCE&G and Santee Cooper have an application pending before the Nuclear Regulatory Commission (NRC) for a combined construction and operating license (COL). The application was filed on March 31, 2008 and the NRC is expected to rule in late 2011 or early 2012.

While volumes of information and testimony were analyzed in the regulatory process, the need for baseload capacity, the benefits of increased fuel diversity and the increasingly stringent environmental regulations were among the primary factors driving the Company to add nuclear capacity. The last baseload unit added to the SCE&G system was Cope Station in 1996. After its addition, the percentage of baseload capacity on the system was about 74% while currently it is only 56%. With the addition of these two nuclear units, the percentage of baseload capacity will be about 63%. Regarding fuel diversity, the current mix of capacity is 11% nuclear, 42% coal and 31% natural gas. With the addition of this nuclear capacity, the mix will be 27% nuclear, 37% coal and 24% natural gas. Finally, since nuclear power is a non-emitting resource, the Company's emission of carbon dioxide, sulfur dioxide, nitrous oxide and mercury will be greatly reduced from that of a resource plan without additional nuclear capacity.

Potential Retirement of Coal Plants

If our energy efficiency programs are as successful as planned and growth in energy sales does not return to pre-recession levels, SCE&G will have the flexibility to evaluate its aging coal-fired plants for potential opportunities to mothball, re-power or retire some of these facilities. The primary motivation for this evaluation at this point is the age of these coal-fired units and the potential cost of maintaining them in the latter part of our planning horizon. SCE&G's smaller coal-fired units range in age from 43 to 58 years as of 2010. By the end of our 15 year planning horizon, the Company anticipates the need for significant capital investment in one or more of these units. However, since the load continues to grow and with it the need for additional capacity, the Company is also considering the option to mothball a unit for a few years and then refurbish and perhaps re-power it with natural gas. These are all economic questions that the Company will analyze in the coming years. Fortunately the Company's resource plan and its portfolio of energy efficiency programs provide flexibility and time to study these options and maximize the economic value to our customers. Hopefully it will also provide time for some of the current uncertainty regarding environmental regulations to be resolved.

Projected Loads and Resources

SCE&G's resource plan for the next 15 years is shown in the table "SCE&G Forecast Loads and Resources – 2010 IRP" on a following page. The resource plan shows the need for additional capacity and identifies, at least, on a preliminary basis whether the need is for peaking/intermediate capacity or baseload capacity. It should be noted that line 13 in the table labeled "Firm Annual Purchase" represents a capacity deficit in the plan and not a decision by SCE&G to purchase this capacity. As discussed previously, the Company hopes to meet some of this capacity deficit with additional DSM. In this sense SCE&G considers the plan shown here as "the plan to beat".

On line 11 the resource plan shows a decrease in capacity of 90 MWs in 2016 and 210 MWs in 2019. These represent the possible retirement of coal units.

Two additional resource plans are shown in the following pages: one for the high load growth scenario and one for the low load scenario.

The Company believes that its supply plan, summarized in the following table, will be as benign to the environment as possible because of the Company's continuing efforts to utilize state-of-the-art emission reduction technology in compliance with state and federal laws and regulations. The supply plan will also help SCE&G keep its cost of energy service at a minimum since the generating units being added are competitive with alternatives in the market.

SCE&G Forecast of Summer Loads and Resources - 2010 IRP - BASE Load Scenario

	YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Load Forecast																
1	Baseline Trend	4972	5085	5216	5326	5429	5526	5642	5762	5884	6012	6149	6289	6426	6556	6680
2	EE Impact	-10	-23	-58	-96	-130	-159	-191	-228	-268	-312	-325	-335	-345	-355	-365
3	Gross Territorial Peak	4962	5062	5158	5230	5299	5367	5451	5534	5616	5700	5824	5954	6081	6201	6315
4	Demand Response	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210
5	Net Territorial Peak	4752	4852	4948	5020	5089	5157	5241	5324	5406	5490	5614	5744	5871	5991	6105
6	Firm Contract Sales	250	250	250												
7	Total Firm Obligation	5002	5102	5198	5020	5089	5157	5241	5324	5406	5490	5614	5744	5871	5991	6105
System Capacity																
8	Existing	5685	5685	5685	5685	5685	5685	5685	6209	6209	6209	6613	6613	6613	6613	6799
	Additions															
9	Peaking/Intermediate														186	93
10	Baseload							614			614					
11	Other							-90			-210					
12	Total System Capacity	5685	5685	5685	5685	5685	5685	6209	6209	6209	6613	6613	6613	6613	6799	6892
13	Firm Annual Purchase		50	150		50	150									
14	Total Production Capability	5685	5735	5835	5685	5735	5835	6209	6209	6209	6613	6613	6613	6613	6799	6892
Reserves																
15	Margin (L14-L7)	683	633	637	665	646	678	968	885	803	1123	999	869	742	808	787
16	% Reserve Margin (L15/L7)	13.7%	12.4%	12.3%	13.2%	12.7%	13.1%	18.5%	16.6%	14.9%	20.5%	17.8%	15.1%	12.6%	13.5%	12.9%
17	% Capacity Margin (L15/L14)	12.0%	11.0%	10.9%	11.7%	11.3%	11.6%	15.6%	14.3%	12.9%	17.0%	15.1%	13.1%	11.2%	11.9%	11.4%

SCE&G Forecast of Summer Loads and Resources - 2010 IRP - HIGH Load Scenario

YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Load Forecast															
1 Baseline Trend	4972	5085	5371	5502	5625	5743	5881	6023	6169	6321	6485	6651	6815	6971	7121
2 EE Impact	-5	-12	-24	-38	-52	-64	-78	-94	-112	-132	-135	-138	-141	-144	-147
3 Gross Territorial Peak	4967	5073	5347	5464	5573	5679	5803	5929	6057	6189	6350	6513	6674	6827	6974
4 Demand Response	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210
5 Net Territorial Peak	4757	4863	5137	5254	5363	5469	5593	5719	5847	5979	6140	6303	6464	6617	6764
6 Firm Contract Sales	250	250	250												
7 Total Firm Obligation	5007	5113	5387	5254	5363	5469	5593	5719	5847	5979	6140	6303	6464	6617	6764
System Capacity															
8 Existing	5685	5685	5685	5685	5685	5685	5685	6299	6485	6578	7192	7192	7192	7285	7471
Additions															
9 Peaking/Intermediate								186	93				93	186	186
10 Baseload							614			614					
11 Other															
12 Total System Capacity	5685	5685	5685	5685	5685	5685	6299	6485	6578	7192	7192	7192	7285	7471	7657
13 Firm Annual Purchase		75	400	250	350	500									
14 Total Production Capability	5685	5760	6085	5935	6035	6185	6299	6485	6578	7192	7192	7192	7285	7471	7657
Reserves															
15 Margin (L14-L7)	678	647	698	681	672	716	706	766	731	1213	1052	889	821	854	893
16 % Reserve Margin (L15/L7)	13.5%	12.7%	13.0%	13.0%	12.5%	13.1%	12.6%	13.4%	12.5%	20.3%	17.1%	14.1%	12.7%	12.9%	13.2%
17 % Capacity Margin (L15/L14)	11.9%	11.2%	11.5%	11.5%	11.1%	11.6%	11.2%	11.8%	11.1%	16.9%	14.6%	12.4%	11.3%	11.4%	11.7%

SCE&G Forecast of Summer Loads and Resources - 2010 IRP - LOW Load Scenario

YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Load Forecast															
1 Baseline Trend	4972	5085	5029	4925	5007	5084	5178	5275	5373	5476	5586	5698	5807	5913	6013
2 EE Impact	-10	-23	-50	-84	-114	-142	-173	-208	-246	-289	-299	-308	-316	-325	-334
3 Gross Territorial Peak	4962	5062	4979	4841	4893	4942	5005	5067	5127	5187	5287	5390	5491	5588	5679
4 Demand Response	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210	-210
5 Net Territorial Peak	4752	4852	4769	4631	4683	4732	4795	4857	4917	4977	5077	5180	5281	5378	5469
6 Firm Contract Sales	250	250	250												
7 Total Firm Obligation	5002	5102	5019	4631	4683	4732	4795	4857	4917	4977	5077	5180	5281	5378	5469
System Capacity															
8 Existing	5685	5685	5685	5685	5685	5685	5685	5969	5969	5969	6183	6183	6183	6183	6183
Additions															
9 Peaking/Intermediate															
10 Baseload							614			614					
11 Other							-330			-400					
12 Total System Capacity	5685	5685	5685	5685	5685	5685	5969	5969	5969	6183	6183	6183	6183	6183	6183
13 Firm Annual Purchase		75													
14 Total Production Capability	5685	5760	5685	5685	5685	5685	5969	5969	5969	6183	6183	6183	6183	6183	6183
Reserves															
15 Margin (L14-L7)	683	658	666	1054	1002	953	1174	1112	1052	1206	1106	1003	902	805	714
16 % Reserve Margin (L15/L7)	13.7%	12.9%	13.3%	22.8%	21.4%	20.1%	24.5%	22.9%	21.4%	24.2%	21.8%	19.4%	17.1%	15.0%	13.1%
17 % Capacity Margin (L15/L14)	12.0%	11.4%	11.7%	18.5%	17.6%	16.8%	19.7%	18.6%	17.6%	19.5%	17.9%	16.2%	14.6%	13.0%	11.5%

Transmission Planning

SCE&G's transmission planning practices develop and coordinate a program that provides for timely modifications to the SCE&G transmission system to ensure a reliable and economical delivery of power. This program includes the determination of the current capability of the electrical network and a ten-year schedule of future additions and modifications to the system. These additions and modifications are required to support customer growth, provide emergency assistance and maintain economic opportunities for our customers while meeting SCE&G and industry transmission performance standards.

SCE&G has an ongoing process to determine the current and future performance level of the SCE&G transmission system. Numerous internal studies are undertaken that address the service needs of our customers. These needs include: 1) distributed load growth of existing residential, commercial, industrial, and wholesale customers, 2) new residential, commercial, industrial, and wholesale customers and 3) customers who use only transmission services on the SCE&G system.

SCE&G has developed and adheres to a set of internal Long Range Planning Criteria which can be summarized as follows:

> *The requirements of the SCE&G "LONG RANGE PLANNING CRITERIA" will be satisfied if the system is designed so that during any of the following contingencies, only short-time overloads, low voltages and local loss of load will occur and that after appropriate switching and re-dispatching, all non-radial load can be served with reasonable voltages and that lines and transformers are operating within acceptable limits.*
>
> a. *Loss of any bus and associated facilities operating at a voltage level of 115kV or above*
> b. *Loss of any line operating at a voltage level of 115kV or above*
> c. *Loss of entire generating capability in any one plant*
> d. *Loss of all circuits on a common structure*
> e. *Loss of any transmission transformer*
> f. *Loss of any generating unit simultaneous with the loss of a single transmission line*
>
> *Outages more severe are considered acceptable if they will not cause equipment damage or result in uncontrolled cascading outside the local area.*

Furthermore, SCE&G subscribes to the set of mandatory Electric Reliability Organization (ERO), also known as the North American Electric Reliability Corporation (NERC), Reliability Standards for Transmission Planning, as approved by the NERC Board of Trustees and the FERC. SCE&G tests and designs its transmission system to be compliant with the requirements as set forth in these standards. A copy of the NERC Reliability Standards is available at the NERC website http://www.nerc.com/.

The SCE&G transmission system is interconnected with Progress Energy – Carolinas, Duke Energy, South Carolina Public Service Authority (Santee Cooper), Georgia Power (Southern Company) and the Southeastern Electric Power Administration (SEPA) systems. Because of these interconnections with neighboring systems, system conditions on other systems can affect the capabilities of the SCE&G transmission system and also system conditions on the SCE&G transmission system can affect other systems. SCE&G participates with other transmission owners throughout the southeast to develop current and future power flow and stability models of the integrated transmission grid for the NERC Eastern Interconnection. All participants' models are merged together to produce current and future models of the integrated electrical network. Using these models, SCE&G evaluates its current and future transmission system for compliance with the SCE&G Long Range Planning Criteria and the NERC Reliability Standards.

To ensure the reliability of the SCE&G transmission system while considering conditions on other systems and to assess the reliability of the integrated transmission grid, SCE&G participates in assessment studies with neighboring transmission owners in South Carolina, North Carolina and Virginia. SCE&G also, on an annual basis, participates with other transmission owners throughout the southeast to assess the reliability of the southeastern integrated transmission grid for the long-term horizon (up to 10 years) and for upcoming seasonal (summer and winter) system conditions.

The following is a list of joint studies with neighboring transmission owners completed over the past year:

1. 2009 January OASIS Study
2. 2009 April OASIS Study
3. 2009 July OASIS Study
4. 2009 October OASIS Study
5. SERC NTSG Reliability 2009 Summer Study
6. SERC NTSG Reliability 2009/2010 Winter Study
7. SERC East / RFC 2009 Summer Study
8. SERC East / RFC 2009/2010 Winter Study
9. SERC LTSG 2019 Summer Study
10. SERC LTSG 2015 Summer Study
11. VACAR 2015 Summer/Study
12. VACAR 2014/2015 Winter Stability Study

where the acronyms used above have the following reference:

OASIS - Open Access Same-time Information System;
SERC- SERC Reliability Corporation
NTSG – Near Term Study Group of SERC
RFC – Reliability First Corporation
LTSG – Long Term Study Group of SERC
VACAR – Virginia-Carolinas sub-region of SERC.

These activities, as discussed above, provide for a reliable and cost effective transmission system for SCE&G customers.

FERC Order 890 – Attachment K (Transmission Planning)

On March 15, 2007, the Federal Energy Regulatory Commission (FERC) published in the Federal Register a final rule reforming the 1996 open-access transmission regulatory framework rules in Orders No. 888 and 889. This final rule, called FERC Order No. 890, was adopted by FERC on February 15, 2007 and is designed to "prevent undue discrimination and preference in transmission service." Among other requirements, this order requires transmission providers to establish an open, transparent and coordinated transmission planning process that includes FERC jurisdictional stakeholder involvement. SCE&G and the South Carolina Public Service Authority (Santee Cooper) have jointly established the South Carolina Regional Transmission Planning (SCRTP) process to meet the requirements of FERC Order No. 890. Documentation of this process was filed with the FERC on December 7, 2007 in the form of Attachment K to the SCE&G Open Access Transmission Tariff (OATT). Activities associated with this process can be reviewed and followed at the SCRTP website (www.scrtp.com).

Appendix A

Short Range Methodology

This section presents the development of the short-range electric sales forecasts for the Company. Two years of monthly forecasts for electric customers, average usage, and total usage were developed according to Company class and rate structures, with industrial customers further classified into SIC (Standard Industrial Classification) codes. Residential customers were classified by housing type (single family, multi-family, and mobile homes) and by whether or not they use electric space heating. For each forecasting group, the number of customers and either total usage or average usage was estimated for each month of the forecast period.

The short-range methodologies used to develop these models were determined primarily by available data, both historical and forecast. Monthly sales data by class and rate are generally available historically. Monthly heating and cooling degree data for Columbia and Charleston are also available historically, and may be forecast using averages based on NOAA normals.[1] Industrial production indices are also available by SIC on a quarterly basis, and can be transformed to a monthly series. Therefore, sales, weather, industrial production indices, and time dependent variables were used in the short range forecast. In general, the forecast groups fall into two classifications, weather sensitive and non-weather sensitive. For the weather sensitive classes, regression analysis was the methodology used, while for the non-weather sensitive classes regression analysis or time series models based on the autoregressive integrated moving average (ARIMA) approach of Box-Jenkins were used.

The short range forecast developed from these methodologies was also adjusted for marketing programs, new industrial loads, terminated contracts, or economic factors as discussed in Section 3.

Regression Models

Regression analysis is a method of developing an equation which relates one variable, such as usage, to one or more other variables which help explain fluctuations and trends in the first. This method is mathematically constructed so that the resulting combination of explanatory variables produces the smallest squared error between the historic actual values and those estimated by the regression. The output of the regression analysis provides an equation for the variable being explained. Several statistics which indicate the success of the regression analysis fit are shown for each model. Several of these indicators are R^2, Root Mean Squared Error, Durbin-Watson Statistic, F-Statistic, and the T-Statistics of the Coefficient. PROC REG of SAS[2] was used to estimate all regression models. PROC AUTOREG of SAS was used if significant autocorrelation, as indicated by the Durbin-Watson statistic, was present in the model.

Two variables were used extensively in developing weather sensitive average use models: heating degree days (HDD) and cooling degree days (CDD). The values for HDD and CDD are the average of the values for Charleston and Columbia. The base for HDD was 60^o and for CDD was 75^o. In order to account for cycle billing, the degree day values for each day were weighted by the number of billing cycles which included that day for the current month's billing. The daily weighted degree day values were summed to obtain monthly degree day values. Billing sales for a calendar month may actually reflect consumption that occurred in the previous month based on weather conditions in that period and also consumption occurring in the current month. Therefore, this method should more accurately reflect the impact of weather variations on the consumption data.

The development of average use models began with plots of the HDD and CDD data versus average use by month. This process led to the grouping of months with similar average use patterns. Summer and winter groups were chosen, with the summer models including the months of May through October, and the winter models including the months of November through April. For each of the groups, an average use model was developed. Total usage models were developed with a similar methodology for the municipal and cooperative customers. For these customers, HDD and CDD were weighted based on Cycle 20 distributions. This is the last reading date for bills in any given month, and is generally used for larger customers.

The plots also revealed significant changes in average use over time. Three types of variables were used to measure the effect of time on average use:

1. Number of months since a base period;
2. Dummy variable indicating before or after a specific point in time; and,
3. Dummy variable for a specific month or months.

Some models revealed a decreasing trend in average use, which is consistent with conservation efforts and improvements in energy efficiency. However, other models showed an increasing average use over time. This could be the result of larger houses, increasing appliance saturations, lower real electricity prices, and/or higher real incomes.

ARIMA Models

Autoregressive integrated moving average (ARIMA) procedures were used in developing the short range forecasts. For various class/rate groups, they were used to develop customer estimates, average use estimates, or total use estimates.

ARIMA procedures were developed for the analysis of time series data, i.e., sets of observations generated sequentially in time. This Box-Jenkins approach is based on the assumption that the behavior of a time series is due to one or more identifiable influences. This method recognizes three effects that a particular observation may have on subsequent values in the series:

1. A decaying effect leads to the inclusion of autoregressive (AR) terms;

2. A long-term or permanent effect leads to integrated (I) terms; and,

3. A temporary or limited effect leads to moving average (MA) terms.

Seasonal effects may also be explained by adding additional terms of each type (AR, I, or MA).

The ARIMA procedure models the behavior of a variable that forms an equally spaced time series with no missing values. The mathematical model is written:

$$Z_t = u + Y_i \ (B)\ X_{i,t} + q\ (B)/ f\ (B)\ a_t$$

This model expresses the data as a combination of past values of the random shocks and past values of the other series, where:

t	indexes time
B	is the backshift operator, that is $B\ (X_t) = X_{t-1}$
Z_t	is the original data or a difference of the original data
f(B)	is the autoregressive operator, $f(B) = 1 – f_1 B - … - f_1 B^p$
u	is the constant term
q(B)	is the moving average operator, $q\ (B) = 1 - q_1 B - ... - q_q B^q$
a_t	is the independent disturbance, also called the random error
$X_{i,t}$	is the ith input time series
$y_i(B)$	is the transfer function weights for the ith input series (modeled as a ratio of polynomials)
$y_i(B)$	is equal to $w_i (B)/ d_i (B)$, where $w_i (B)$ and $d_i (B)$ are polynomials in B.

The Box-Jenkins approach is most noted for its three-step iterative process of identification, estimation, and diagnostic checking to determine the order of a time series. The autocorrelation and partial autocorrelation functions are used to identify a tentative model for univariate time series. This tentative model is estimated. After the tentative model has been fitted to the data, various checks are performed to see if the model is appropriate. These checks involve analysis of the residual series created by the estimation process and often lead to refinements in the tentative model. The iterative process is repeated until a satisfactory model is found.

Many computer packages perform this iterative analysis. PROC ARIMA of (SAS/ETS)[3] was used in developing the ARIMA models contained herein.

The attractiveness of ARIMA models comes from data requirements. ARIMA models utilize data about past energy use or customers to forecast future energy use or customers. Past history on energy use and customers serves as a proxy for all the measures of factors underlying energy use and customers when other variables were not available. Univariate ARIMA models were used to forecast average use or total usage when weather-related variables did not significantly affect energy use or alternative independent explanatory variables were not available.

Footnotes

1. The 15-year average daily weather "normals" were based on data from 1993 to 2007 published by the National Oceanic and Atmospheric Association.

2. SAS Institute, Inc., SAS/STAT[tm] Guide for Personal Computers, Version 6 Edition. Cary, NC: SAS Institute, Inc., 1987.

3. SAS Institute, Inc., SAS/ETS User's Guide, Version 6, First Edition. Cary, NC: SAS Institute, Inc., 1988.

Electric Sales Assumptions

For short-term forecasting, over 30 forecasting groups were defined using the Company's customer class and rate structures. Industrial (Class 30) Rate 23 was further divided using SIC codes. In addition, twenty-seven large industrial customers were individually projected. The residential class was disaggregated into those customers with electric space heating and those without electric space heating and by housing type (single family, multi-family, and mobile homes). Each municipal and cooperative account represents a forecasting group and were also individually forecast. Discussions were held with Industrial Marketing and Economic Development representatives within the Company regarding prospects for industrial expansions or new customers, and adjustments made to customer, rate, or account projections where appropriate. Table 1 contains the definition for each group and Table 2 identifies the methodology used and the values forecasted by forecasting groups.

The forecast for Company Use is based on historic trends and adjusted for Summer nuclear plant outages. Unaccounted for energy, which is the difference between generation and sales and represents for the most part system losses, is usually about 4.4% of total territorial sales. The monthly allocations for unaccounted for were based on a regression model using normal total degree-days for the calendar month and total degree-days weighted by cycle billing. Adding Company use and unaccounted for to monthly territorial sales produces electric generation requirements

.

TABLE 1
Short-Term Forecasting Groups

Class Number	Class Name	Rate/SIC Designation	Comment
10	Residential Non-Space Heating	Single Family	Rates 1, 2, 5, 6, 8, 18, 25, 26, 62, 64
		Multi Family	67, 68, 69
910	Residential Space Heating	Mobile Homes	
20	Commercial Non-Space Heating	Rate 9	Small General Service
		Rate 12	Churches
		Rate 20, 21	Medium General Service
		Rate 22	Schools
		Rate 24	Large General Service
		Other Rates	10, 11, 14, 16, 17, 18, 24, 25, 26, 27, 29, 62, 64, 67, 69
920	Commercial Space Heating	Rate 9	Small General Service
30	Industrial Non-Space Heating	Rate 9	Small General Service
		Rate 20, 21	Medium General Service
		Rate 23, SIC 22	Textile Mill Products
		Rate 23, SIC 24	Lumber, Wood Products, Furniture and Fixtures (SIC Codes 24 and 25)
		Rate 23, SIC 26	Paper and Allied Products
		Rate 23, SIC 28	Chemical and Allied Products
		Rate 23, SIC 30	Rubber and Miscellaneous Products
		Rate 23, SIC 32	Stone, Clay, Glass, and Concrete
		Rate 23, SIC 33	Primary Metal Industries; Fabricated Metal Products; Machinery; Electric and Electronic Machinery, Equipment and Supplies; and Transportation Equipment (SIC Codes 33-37)
		Rate 23, SIC 99	Other or Unknown SIC Code*
		Rate 24, 27, 60	Large General Service
		Other	Rates 18, 25, and 26
60	Street Lighting	Rates 3, 9, 13, 17, 18, 25, 26, 29, and 69	
70	Other Public Authority	Rates 3, 9, 20, 25, 26, 29, 65 and 66	
92	Municipal	Rate 60, 61	Four Individual Accounts
97	Cooperative	Rate 60	One Account

*Includes small industrial customers from all SIC classifications that were not previously forecasted individually. Industrial Rate 23 also includes Rate 24. Commercial Rate 24 also includes Rate 23.

TABLE 2

Summary of Methodologies Used To Produce
The Short Range Forecast

Value Forecasted	Methodology	Forecasting Groups
Average Use	Regression	Class 10, All Groups Class 910, All Groups Class 20, Rates 9, 12, 20, 22, 24, 99 Class 920, Rate 9 Class 70, Rate 3
Total Usage	ARIMA/ Regression	Class 30, Rates 9, 20, 99, and 23, for SIC = 91 and 99 Class 930, Rate 9 Class 60 Class 70, Rates 65, 66
	Regression	Class 92, All Accounts Class 97, All Accounts
Customers	ARIMA	Class 10, All Groups Class 910, All Groups Class 20, All Rates Class 920, Rate 9 Class 30, All Rates Except 60, 99, and 23 for SIC = 22, 24, 26, 28, 30, 32, 33, and 91 Class 930, Rate 9 Class 60 Class 70, Rate 3

Appendix B

Long Range Sales Forecast

Electric Sales Forecast

This section presents the development of the long-range electric sales forecast for the Company. The long-range electric sales forecast was developed for seven classes of service: residential, commercial, industrial, street lighting, other public authorities, municipal and cooperatives. These classes were disaggregated into appropriate subgroups where data was available and there were notable differences in the data patterns. The residential, commercial, and industrial classes are considered the major classes of service and account for over 90% of total territorial sales. A customer forecast was developed for each major class of service. For the residential class, forecasts were also produced for those customers with electric space heating and for those without electric space heating. They were further disaggregated into housing types of single family, multi-family and mobile homes. In addition, two residential classes and residential street lighting were evaluated separately. These subgroups were chosen based on available data and differences in the average usage levels and/or data patterns. The industrial class was disaggregated into two digit SIC code classification for the large general service customers, while smaller industrial customers were grouped into an "other" category. These subgroups were chosen to account for the differences in the industrial mix in the service territory. With the exception of the residential group, the forecast for sales was estimated based on total usage in that class of service. The number of residential customers and average usage per customer were estimated separately and total sales were calculated as a product of the two.

The forecast for each class of service was developed utilizing an econometric approach. The structure of the econometric model was based upon the relationship between the variable to be forecasted and the economic environment, weather, conservation, and/or price.

Forecast Methodology

Development of the models for long-term forecasting was econometric in approach and used the technique of regression analysis. Regression analysis is a method of developing an equation, which relates one variable, such as sales or customers, to one or more other variables that are statistically correlated with the first, such as weather, personal income or population growth. Generally, the goal is to find the combination of explanatory variables producing the smallest error between the historic actual values and those estimated by the regression. The output of the regression analysis provides an equation for the variable being explained. In the equation, the variable being explained equals the sum of the explanatory variables each multiplied by an estimated coefficient. Various statistics, which indicate the success of the regression analysis fit, were used to evaluate each model. The indicators were R^2, mean squared Error of the Regression, Durbin-Watson Statistic and the T-Statistics of the Coefficient. PROC STEPWISE, PROC REG, and PROC AUTOREG of SAS were used to estimate all regression models. PROC STEPWISE was used for preliminary model specification and elimination of insignificant variables. PROC REG was used for the final model specifications. Model development also included residual analysis for incorporating dummy variables and an analysis of how well the models fit the historical data, plus checks for any statistical problems such as autocorrelation or multicollinearity. PROC AUTOREG was used if autocorrelation was present as indicated by the Durbin-Watson statistic. Prior to developing the long-range models, certain design decisions were made:

- The multiplicative or double log model form was chosen. This form allows forecasting based on growth rates, since elasticities with respect to each explanatory variable are given directly by their respective regression coefficients. Elasticity explains the responsiveness of changes in one variable (e.g. sales) to changes in any other variable (e.g. price). Thus, the elasticity coefficient can be applied to the forecasted growth rate of the explanatory variable to obtain a forecasted growth rate for a dependent variable. These forecasted growth rates were then applied to the last year of the short range forecast to obtain the forecast level for customers or sales for the long range forecast. This is a constant elasticity model, therefore, it is important to evaluate the reasonableness of the model coefficients.

- One way to incorporate conservation effects on electricity is through real prices, or time trend variables. Models selected for the major classes would include these variables, if they were statistically significant.
- The remaining variables to be included in the models for the major classes would come from four categories:
    1. Demographic variables - Population.
    2. Measures of economic well-being or activity: real personal income, real per capita income, employment variables, and industrial production indices.
    3. Weather variables - average summer/winter temperature or heating and cooling degree-days.
    4. Variables identified through residual analysis or knowledge of political changes, major economics events, etc. (e.g., foreign oil price increases in 1979 and recession versus non-recession years).

Standard statistical procedures (all possible regressions, stepwise regression) were used to obtain preliminary specifications for the models. Model parameters were then estimated using historical data and competitive models were evaluated on the basis of:

- Residual analysis and traditional "goodness of fit" measures to determine how well these models fit the historical data and whether there were any statistical problems such as autocorrelation or multicollinearity.
- An examination of the model results for the most recently completed full year.

- An analysis of the reasonableness of the long-term trend generated by the models. The major criteria here was the presence of any obvious problems, such as the forecasts exceeding all rational expectations based on historical trends and current industry expectations.
- An analysis of the reasonableness of the elasticity coefficient for each explanatory variable. Over the years a host of studies have been conducted on various elasticities relating to electricity sales. Therefore, one check was to see if the estimated coefficients from Company models were in-line with others. As a result of the evaluative procedure, final models were obtained for each class.
- The drivers for the long-range electric forecast included the following variables.

Service Area Population
Service Area Real Per Capita Income
Service Area Real Personal Income
State Industrial Production Indices
Real Price of Electricity
Average Summer Temperature
Average Winter Temperature
Heating Degree Days
Cooling Degree Days

The service area data included Richland, Lexington, Berkeley, Dorchester, Charleston, Aiken and Beaufort counties, which account for the vast majority of total territorial electric sales. Service area historic data and projections were used for all classes with the exception of the industrial class. Industrial productions indices were only available on a statewide basis, so forecasting relationships were developed using that data. Since industry patterns are generally based on regional and national economic patterns, this linking of Company industrial sales to a larger geographic index was appropriate.

Economic Assumptions

In order to generate the electric sales forecast, forecasts must be available for the independent variables. The forecasts for the economic and demographic variables were obtained from Global Insight, Inc., (formerly DRI-WEFA) and the forecasts for the price and weather variables were based on historical data. The trend projection developed by Global Insight is characterized by slow, steady growth, representing the mean of all possible paths that the economy could follow if subject to no major disruptions, such as substantial oil price shocks, untoward swings in policy, or excessively rapid increases in demand.

Average summer temperature or CDD (Average of June, July, and August temperature) and average winter temperature or HDD (Average of December (previous year), January and February temperature) were assumed to be equal to the normal values used in the short range forecast.

Peak Demand Forecast

This section describes the procedures used to create the long-range summer and winter peak demand forecasts. It also describes the methodology used to forecast monthly peak demands. Development of summer peak demands will be discussed initially, followed by the construction of winter peaks.

Summer Peak Demand

The forecast of summer peak demands was developed with a load factor methodology. This methodology may be characterized as a building-block approach because class, rate, and some individual customer peaks are separately determined and then summed to derive the territorial peak.

Briefly, the following steps were used to develop the summer peak demand projections. Load factors for selected classes and rates were first calculated from historical data and then used to estimate peak demands from the projected energy consumption among these categories. Next, planning peaks were determined for a number of large industrial customers. The demands of these customers were forecasted individually. Summing these class, rate, and individual customer demands provided the forecast of summer territorial peak demand. Next, the incremental reductions in demand resulting from the Company's standby generator and interruptible programs were subtracted from the peak demand forecast. This calculation gave the firm summer territorial peak demand, which was used for planning purposes.

Load Factor Development

As mentioned above, load factors are required to calculate KW demands from KWH energy. This can be seen from the following equation, which shows the relationship between annual load factors, energy, and demand:

Load Factor = Energy/(Demand x 8760)

The load factor is thus seen to be a ratio of total energy consumption relative to what it might have been if the customer had maintained demand at its peak level throughout the year. The value of a load factor will usually range between 0 and 1, with lower values indicating more variation in a customer's consumption patterns, as typified by residential users with relatively large space-conditioning loads. Conversely, higher values result from more level demand patterns throughout the year, such as those seen in the industrial sector.

Rearrangement of the above equation makes it possible to calculate peak demand, given energy and a corresponding load factor. This form of the equation is used to project peak demand herein. The question then becomes one of determining an appropriate load factor to apply to projected energy sales.

The load factors used for the peak demand forecast were not based on one-hour coincident peaks. Instead, it was determined that use of a 4-hour average class peak was more appropriate for forecasting purposes. This was true for two primary reasons. First, analysis of territorial peaks showed that all of the summer peaks had occurred between the hours of 2 and 6 PM. However, the distribution of these peaks between those four hours was fairly evenly spread. It was thus concluded that while the annual peak would occur during the 4-hour band, it would not be possible to say with a high degree of confidence during which hour it would happen.

Second, the coincident peak demand of the residential and commercial classes depended on the hour of the peak's occurrence. This was due to the former tending to increase over the 4-hour band, while the latter declined. Thus, load factors based on peaks occurring at, say, 2 PM, would be quite different from those developed for a 5 PM peak. It should also be noted that the class contribution to peak is quite stable for groups other than residential and commercial. This means that the 4-hour average class demand, for say, municipals, was within 2% of the 1-hour coincident peak. Consequently, since the hourly probability of occurrence was roughly equal for peak demand, it was decided that a 4-hour average demand was most appropriate for forecasting purposes.

The effect of system line losses were embedded into the class load factors so they could be applied directly to customer level sales and produce generation level demands. This was a convenient way of incorporating line losses into the peak demand projections.

Energy Projections

For those categories whose peak demand was to be projected from KWH sales, the next requirement was a forecast of applicable sales on an annual basis. These projections were utilized in the peak demand forecast construction. In addition, street light sales were excluded from forecast sales levels when required, since there is no contribution to peak demand from this type of sale.

Combining load factors and energy sales resulted in a preliminary, or unadjusted peak demand forecast by class and/or rate. The large industrial customers whose peak demands were developed separately were also added to this forecast.

Derivation of the planning peak required that the impact of demand reduction programs be subtracted from the unadjusted peak demand forecast. This is true because the capacity expansion plan is sized to meet the firm peak demand, which includes the reductions attributable to such programs.

Winter Peak Demand

To project winter peaks actual winter peak demands were correlated with two primary explanatory variables, total territorial energy and weather during the day of the winter peak's occurrence. Other dummy variables were also tested for inclusion in the model to account for unusual events, such as recessions or extremely cold winters, but the final model utilized the two variables named above.

The logic behind the choice of these variables as determinants of winter peak demand is straightforward. Over time, growth in total territorial load is correlated with economic growth and activity in SCE&G's service area, and as such may be used as a proxy variable for those economic factors, which cause winter peak demand to change. It should be noted that the winter peak for any given year by industry convention is defined as occurring after the summer peak for that year. The winter period for each year is December of that year, along with January and February of the following year. For example, the winter peak in 1968 of 962 MW occurred on December 11, 1968, while the winter peak for 1969 of 1,126 MW took place on January 8, 1970. In addition to economic factors, weather also causes winter peak demand to fluctuate, so the impact of this variable was measured by the average of heating degree days (HDD) experienced on the winter peak day in Columbia and Charleston. The presence of a weather variable reduces the bias, which would exist in the other explanatory variables' coefficients if weather were excluded from the regression model, given that the weather variable should be included. When the actual forecast of winter peak demand was calculated, the normal value of heating degree-days over the sample period was used. Finally, although the ratio of winter to summer peak demands fluctuated over the sample period, it did show an increase over time. A primary cause for this increasing ratio was growth in the number of electric space heating customers. Due to the introduction and rapid acceptance of heat pumps over the past three decades, space-heating residential customers increased from less than 5,000 in 1965 to almost 217,000 in 2004, a 10.2% annual growth rate. However, this growth slowed dramatically in the 1990's, so the expectation is that the ratio of summer to winter peaks will change slowly in the future.