2011

Integrated

Resource

Plan

SCE&G®
A SCANA COMPANY

Introduction

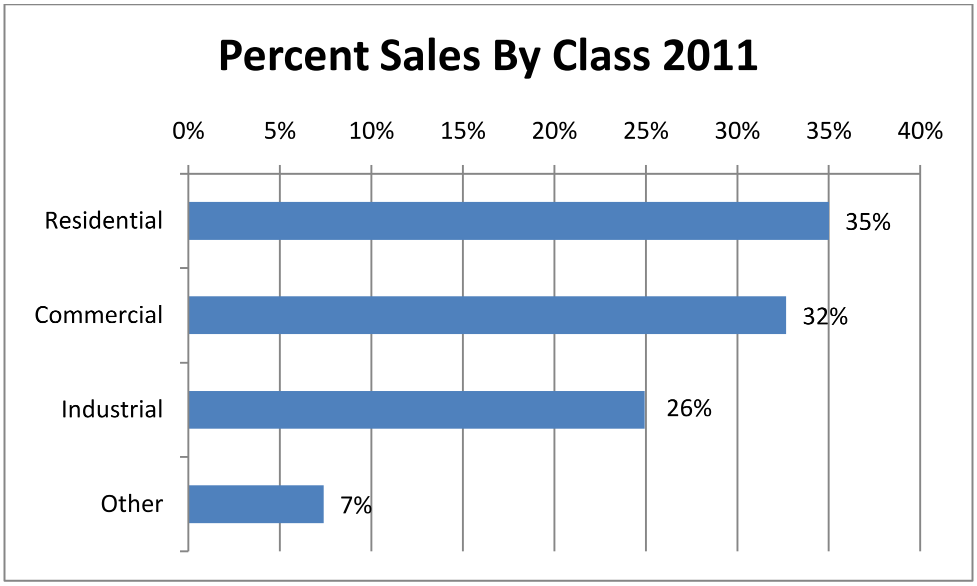
This document presents South Carolina Electric & Gas Company's ("SCE&G" or "Company") Integrated Resource Plan ("IRP") for meeting the energy needs of its customers over the next fifteen years, 2011 through 2025. This document is filed with the Public Service Commission of South Carolina ("Commission") 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 1.7% and 1.8% per year, respectively, over this forecast horizon. The table below contains these projected loads.

	Summer Peak (MW)	Winter Peak (MW)	Energy Sales (GWH)
2011	4,726	4,501	22,952
2012	4,807	4,554	23,161
2013	4,894	4,643	23,551
2014	4,989	4,708	23,991
2015	5,062	4,810	24,053
2016	5,138	4,910	24,382
2017	5,220	5,005	24,705
2018	5,291	5,097	24,999
2019	5,362	5,174	25,295
2020	5,439	5,292	25,412
2021	5,536	5,399	26,084
2022	5,641	5,504	26,590
2023	5,748	5,607	27,087
2024	5,852	5,713	27,581
2025	5,959	5,814	28,103

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 made by each class.



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 the IRP.

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)**
2011	23,024	-72	0	-72	22,952
2012	23,534	-160	-213	-373	23,161
2013	24,100	-263	-286	-549	23,551
2014	24,695	-377	-327	-704	23,991
2015	25,190	-508	-629	-1,137	24,053
2016	25,683	-627	-673	-1,300	24,382
2017	26,189	-765	-719	-1,484	24,705
2018	26,687	-924	-764	-1,688	24,999
2019	27,210	-1,105	-810	-1,915	25,295
2020	27,759	-1,285	-1,062	-2,347	25,412
2021	28,270	-1,285	-902	-2,190	26,084
2022	28,798	-1,285	-924	-2,209	26,590
2023	29,317	-1,285	-945	-2,230	27,087
2024	29,833	-1,285	-967	-2,252	27,581
2025	30,377	-1,285	-989	-2,274	28,103

Baseline sales are projected to grow at the rate of 2.0% 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.

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 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 225 MWs on our system. The following table 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.

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
2011	4,961	-9	-1	-10	4,951	-225	4,726
2012	5,056	-21	-3	-24	5,032	-225	4,807
2013	5,178	-36	-23	-59	5,119	-225	4,894
2014	5,310	-53	-43	-96	5,214	-225	4,989
2015	5,419	-74	-58	-132	5,287	-225	5,062
2016	5,524	-94	-67	-161	5,363	-225	5,138
2017	5,638	-117	-76	-193	5,445	-225	5,220
2018	5,746	-144	-86	-230	5,516	-225	5,291
2019	5,858	-175	-96	-271	5,587	-225	5,362
2020	5,980	-210	-106	-316	5,664	-225	5,439
2021	6,090	-210	-119	-329	5,761	-225	5,536
2022	6,205	-210	-129	-339	5,866	-225	5,641
2023	6,322	-210	-139	-349	5,973	-225	5,748
2024	6,436	-210	-149	-359	6,077	-225	5,852
2025	6,554	-210	-160	-370	6,184	-225	5,959

II. Demand-Side Management at SCE&G

Demand-Side Management (DSM) can be broadly defined as the set of actions that can be taken to influence the level and timing of the consumption of electricity. There are two common subsets of Demand Side Management: Energy Efficiency and Load Management (also known as Demand Response). Energy Efficiency typically includes actions designed to increase efficiency by maintaining the same level of production or comfort, but using less energy input in an economically efficient way. Load Management typically includes actions specifically designed to encourage customers to reduce usage during peak times or shift that usage to other times.

Energy Efficiency

SCE&G's Energy Efficiency programs include Customer Information Programs, Web-based information, Energy Conservation and the newly offered Demand Side Management programs. A description of each follows:

1. **Customer Information Programs:** SCE&G's customer information programs fall under two headings: the annual energy campaigns and web-based information initiatives. The following is an overview of each.

   Annual Energy Campaigns: In 2010, SCE&G continued to proactively educate its customers and create awareness on issues related to energy efficiency and conservation.

   a. **Customer Outreach Marketing and Communications:** Two residential surveys were distributed in 2010 which provided SCE&G valuable insight on customer perceptions about how the company communicates its energy efficiency programs and services. These two vehicles included the annual Brand Health Study and Voice of the Customer Panel. Customer feedback was evaluated thoroughly and implemented as appropriate to ensure we are communicating in a consistent manner that customers will understand.

   b. **Brand/Mass Advertising and Fall Energy Campaign:** Brand advertising for 2010 featured members of the SCE&G Energy Team in a series of print advertising in The State Newspaper and Aiken Standard, driving customers online to www.sceg.com/energywise to learn more about SCE&G's energy saving programs and services. The company continued to air a series of 30-second educational promotions on TV stations throughout its service territory to include targeted cable channels and network TV in Columbia and Charleston during local news programming. Radio continues to be included in the channel mix to ensure a fully integrated approach to reaching customers with practical savings tips to help save energy and money. Radio advertising directed customers to www.sceg.com for additional information and resources.

A continuation of the ongoing brand/mass advertising efforts on energy efficiency communications, SCE&G launched its annual Fall Energy Campaign in October (Energy Awareness Month) providing customers with education and updates about SCE&G's special offers to include the free Home Energy Check-up. Also included was a reminder about the final December 31st deadline for 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 and 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/energywise. In addition to print, placement with TV and radio continued throughout year-end to support ongoing communications about saving energy and money.

c. **South Carolina Appliance Rebate Program:** In March 2010, SCE&G collaborated alongside the South Carolina Energy Office, offering in-kind services to help educate SCE&G residential customers about the South Carolina Energy Office Appliance Rebate Program. The program, which offered SC residents access to federal funds awarded to the State of South Carolina for approved, energy efficient appliance upgrades, was promoted through SCE&G's web site and blog, as well as through bill inserts, bill messaging and print advertising. A designated vanity URL (www.sceg.com/rebates) was developed to ensure updated information about the program was available to customers with a direct link to the South Carolina Energy Office web site for further details about the program.

d. **SCE&G Business Offices (37 locations within service territory):** Energy savings promotions implemented in all Business Office locations, included posters and distribution of "Top 10 Energy Savings Tips" via drive-through envelopes.

e. **EnergyWise Newsletters (Print and new E-Newsletter):** Provided energy efficiency and conservation information for all customer classifications. The print version of the newsletter is mailed twice annually, with 2010 editions being distributed during the winter/spring and fall seasons. In addition, we continued to e-mail the EnergyWise e-newsletter (based on customer demand/online requests for energy savings information) to approximately 1300 residential customers in 2010.

f. **SCE&G/EnergyWise Blog:** SCE&G continued to promote its blog in 2010 (www.sceg.com/energywise) for customers to learn more about energy efficiency programs/services offered by the company. Topics of interest have included a broad range of energy efficiency messaging, seasonal in nature, and highlighting practical savings tips about thermostats, water heaters, household appliances, insulation and air filters, as well as information about SCE&G rebates/incentives and reminders about the deadline for federal tax credits for approved home efficiency upgrades.

g. **News Releases**: Distributed to print and broadcast media throughout SCE&G's service territory on a variety of energy savings programs and services, seasonal energy efficiency communications and the collaboration with the South Carolina Energy Office regarding the Appliance Rebate Program offered through the federal government stimulus funds.

h. **Speakers Bureau**: Representatives from SCE&G made presentations on energy efficiency and conservation programs to several organizations in 2010 including church groups, senior citizen and low-income housing communities, civic organizations, builder groups and homeowner associations.

2. **Web-Based Information and Services Programs:** SCE&G's online offerings can be broken into four components: the Energy Analyzer tool, the online Energy Audit tool, Customer Awareness Information and EnergyWise Blog/E-Newsletter. Altogether there were more than 2.96 million visits to SCE&G's website in 2010 and feedback has been positive. Customers must be registered to use the interactive tools: Energy Analyzer and Energy Audit. There are over 276,000 customers registered for this access. Following is a description of these components:

a. **Energy Analyzer:** The Energy Analyzer, in use since 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 90,000 visits to the Energy Analyzer tool in 2010.

b. **Energy Audit:** The Energy Audit tool 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 4,800 customers who used the Energy Audit tool in 2010.

c. **Customer Awareness Information:** The SCE&G Web 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 door 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 (2010 traffic greater than 60,000).

d. **SCE&G EnergyWise Blog and E-Newsletter:** SCE&G's web-based information and services included ongoing management of two tools/resources in 2010: the Company's blog on energy efficiency at www.sceg.com/energywise (2010 traffic was 2,300) and an EnergyWise e-newsletter to support customer demand for additional information on ways to help them save energy. (3,400 e-newsletters in 2010).

3. **Energy Conservation:** Energy conservation is a term that has been used interchangeably with energy efficiency. However, energy conservation has the connotation of using less energy in order to save rather than using less energy to perform the same or better function more efficiently. The following is an overview of each SCE&G energy conservation offering:

   a. **Energy Saver / Conservation Rate**: Rate 6 (Energy Saver / Conservation) 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 standard which is also a significant benefit to participants. Information on this program is available on our website and by brochure.

b. **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.

c. **In-Home Energy Consultation:** This program continued through October 2010 and was gradually phased out after the approval of the new Demand Side Management programs. This free, in-home energy consultation was designed for residential customers who wanted to be proactive in managing their energy consumption. An Energy Services Representative would complete a walk-through of a customer's home inspecting windows & doors, caulking, weather stripping, insulation levels, appliances, water heaters and HVAC, and assess the home's thermal efficiency. Information about this program was provided on our website, through bill inserts, and through numerous media outlets (newspaper, television, internet, radio, etc.).

d. **Value Visit Program** continued through October 2010 and was gradually phased out after the new Demand Side Management programs were approved. The program was designed to assist residential electric customers who are considering an investment in upgrading their home's thermal efficiency.

4. **Demand Side Management Programs:** On July 15, 2010, SCE&G received an Order from the Commission approving its portfolio of DSM programs. The portfolio included nine programs, seven targeting SCE&G's residential customer classes and two targeting SCE&G's commercial and industrial customer classes. A description of each program with the customer friendly renaming, if applicable, follows:

   a. **Residential Home Energy Reports** (previously Benchmarking) 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. The full offering of this program will occur in the 2nd quarter of 2011.

b. **Residential Energy Information Display** 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. After review of the initial implementation phase, the full offering of this program will occur in the 2nd quarter of 2011.

c. **Residential Home Energy Check-up and Home Performance with ENERGY STAR®** encourages customers to have a specific assessment of the energy efficiency of their homes performed. It will include two tiers of home energy review and assessment.

    i. Beginning in October 2010, the **Home Energy Check-up** program was offered to customers. This visual checkup and "check-off" audit is performed by SCE&G staff at the customer's home. As a direct incentive for customers to participate in the program, customers are offered an energy efficiency kit containing simple measures, such as CFLs, water heater wraps and/or pipe insulation. The Home Energy Check-up is provided free of charge to all residential customers who elect to participate.

    ii. The **Home Performance with ENERGY STAR®** program will go a step further and provide a comprehensive 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 the audit and specific measures undertaken by customers based on the audit findings. The full offering of this program will occur in the 1st quarter of 2011.

    These two DSM programs, as listed above, replaced the previously listed Value Visit and In-Home Energy Consultation programs.

d. **Residential ENERGY STAR® Lighting** program will provide residential customers with incentives for purchasing and installing high-efficiency and ENERGY STAR® qualified lighting. Beginning in the 1st quarter of 2011, all SCE&G customers will be eligible to participate.

e. The **Residential Heating & Cooling and Water Heating Equipment** (previously 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. The full offering of this program will occur in the 1st quarter of 2011.

f. The **Residential Heating & Cooling Efficiency Improvements** (previously named Existing HVAC Efficiency) program will provide residential customers with incentives for investing in efficiency tune-ups and other improvements to their HVAC systems. The full offering of this program will occur in the 1st quarter of 2011.

g. 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. The full offering of this program will occur in the 2nd quarter of 2011.

h. Beginning in October 2010, the **Commercial and Industrial Prescriptive** program began providing lighting incentives to non-residential customers to invest in high-efficiency lighting and fixtures. Beginning the 1st quarter of 2011, SCE&G will go beyond these incentives to include energy efficient measures 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 on the website.

i. **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. The full offering of this program will occur in the 1st quarter of 2011.

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.

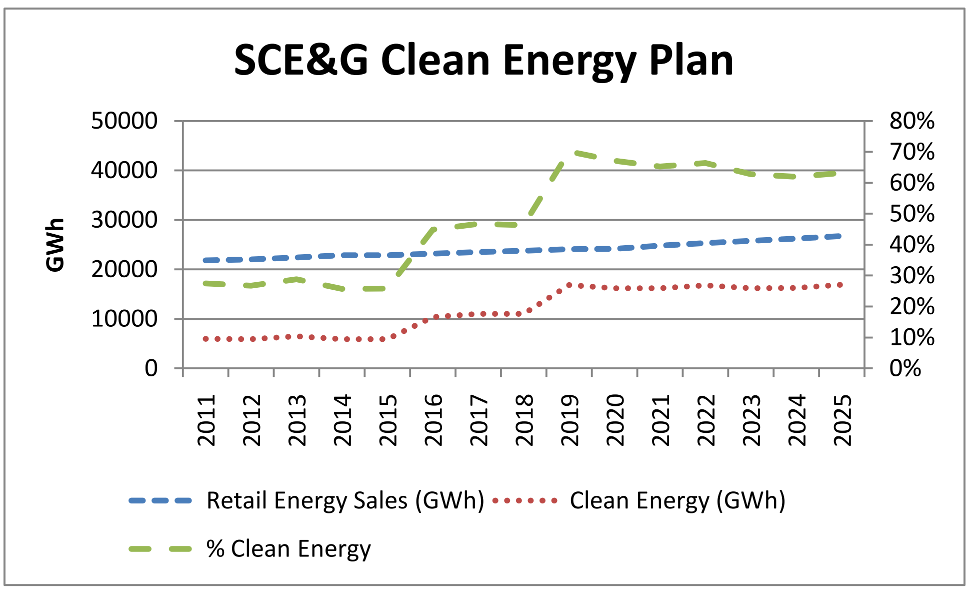
III. Clean Energy at SCE&G

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 the Company's net metering programs and finally in the Company's 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 nearly 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%
2010	346,190	1.5%

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. **Palmetto Clean Energy, Inc.:** Palmetto Clean Energy, Inc. ("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:** In 2010, SCE&G began a project to investigate and evaluate the co-firing of biomass and other engineered waste products in our existing coal burning facilities. The goal of the project is to determine the operational practicality as well as the economic and fuel supply implications of co-firing 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.

   The Company has purchased and set up mobile fuel handling equipment to facilitate testing of different types of biomass and other waste materials at multiple facilities. Tests were conducted at several locations in 2010 and the results are being evaluated by Fossil Hydro to determine a future course of action.
3. **New Renewable Projects:** SCE&G has met with several companies that are considering developing renewable facilities in South Carolina and wish to sell power to SCE&G through a long term purchased power agreement. SCE&G evaluates all power proposals to determine if the power is needed and can be supplied at a price that is competitive with other supply alternatives. The Company is very interested in the renewable market sector but the power has to be economical for our customers.
4. **Smart Grid Activities:** SCE&G currently has close to 10,000 electric meters that are not supported by our "drive by" Automated Meter Reading ("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 planning to install SmartSync meters that will allow us to have full two way communication with these meters. Installation will begin in March and continue through July of 2012. We feel that this capability is particularly important to this class of customer as it will 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 Advanced Metering Infrastructure ("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 Supervisory Control and Data Acquisition ("SCADA") switching and other intelligent devices throughout the system. We have over 600 SCADA switches and reclosers, most of which can detect system outages and operate automatically to isolate sections of line with problems thereby minimizing the number of affected customers. Some of these isolating switches can communicate with each other to determine the optimal configuration to restore service to as many customers as possible without operator intervention. In order to more fully utilize the new technology being deployed, we are researching Distribution Management Systems that would work in conjunction with 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 ("NO_X") 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 NO_X 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 NO_X 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 NO_X 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 NO_X burners at the other coal fired units to meet the CAIR requirements for NO_X.

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 in-service date for Williams and Wateree Stations were February 25, 2010 and October 12, 2010, respectively. Scrubber performance tests at both stations met the SO_2 designed removal rate of 95%.

During 2010, we worked with a contractor to test a Chem-Mod fuel additive that was expected to reduce SO_2, NO_X and mercury at Urquart 3, Canadys, and McMeekin units. Test results through a third party indicate emissions reductions of more than 30% Mercury, more than 7% NO_X, and a 2 – 3% SO_2 reduction. SCE&G recently received a SCDHEC permit for on-going use of Chem-Mod at McMeekin Station, and SCE&G is continuing to pursue applicable permits at other stations.

Through recent testing, reduction in mercury is occurring as a result of the SCR and the wet scrubber installations. SCE&G is currently quantifying the removal efficiency of mercury through third party testing. Any reductions in emissions resulting from the use of the Chem-Mod fuel additive will be a 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:** On May 10, 2010 The EPA issued its Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule. EPA is tailoring the applicability criteria that determine which stationary sources and modification projects become subject to permitting requirements for greenhouse gas (GHG) emissions under the Prevention of Significant Deterioration (PSD) and Title V programs of the Clean Air Act.

   The first step requires that as of January 2, 2011, the applicable requirements of PSD --- most notably, the best available control technology ("BACT") requirement --- will apply to projects that increase net GHG emissions by at least 75,000 tons per year ("tpy") carbon dioxide equivalent ("CO2e"), but only if the project also significantly increases emissions of at least one non-GHG pollutant. For the Title V program, only existing sources with, or new sources obtaining, Title V permits for non-GHG pollutants will be required to address GHGs during this first step.

   The second step of the Tailoring Rule, beginning on July 1, 2011, will phase in additional large sources of GHG emissions. New sources as well as existing sources not already subject to Title V that emit, or have the potential to emit, at least 100,000 tpy CO2e will become subject to the PSD and Title V requirements. In addition, sources that emit or have the potential to emit at least 100,000 tpy CO2e and that undertake a modification that increases net emissions of GHGs by at least 75,000 tpy CO2e will also be subject to PSD requirements. For both steps, we also note that if sources or modifications exceed these CO2e-adjusted GHG triggers, they are not covered by permitting requirements unless their GHG emissions also exceed the corresponding mass-based triggers (i.e., unadjusted for CO2e.)

2. **Renewable Power:** SCE&G also continues to monitor the state and federal bills that, if enacted, will mandate a federal or state renewable portfolio standard ("RPS"). One of the primary purposes of an RPS is to increase the amount of clean energy produced in the U.S. The bills proposed, but not passed, in 2010 required 15-20% 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 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.

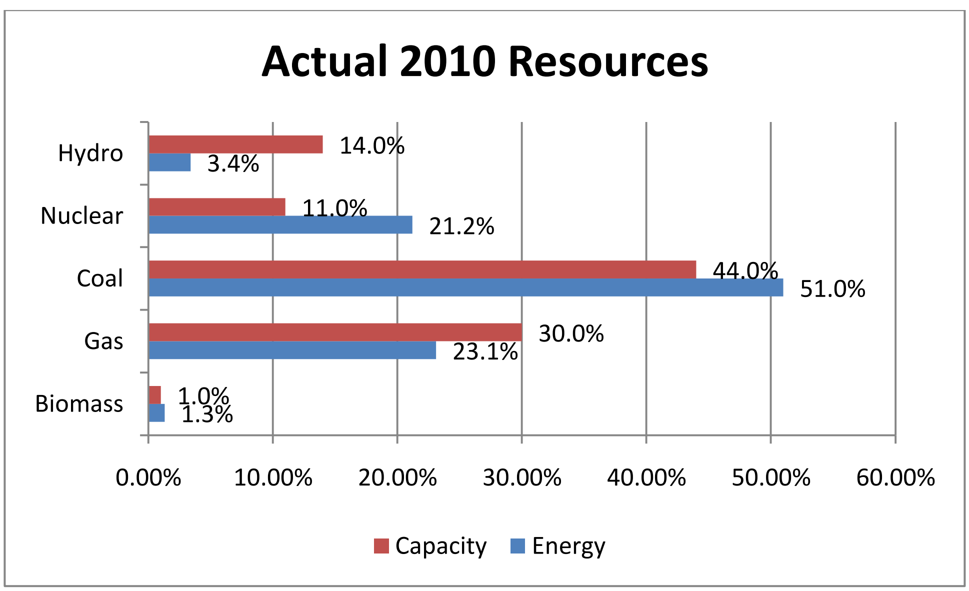
3. **Coal Ash:** The Environmental Protection Agency ("EPA") is currently considering revisions to its regulation of coal ash. EPA has stated it is considering regulating coal combustion residue as hazardous waste. If these new regulations were to come about, utilities across the country, including SCE&G, will be faced with new financial and permitting challenges to store or dispose of coal ash. This will also have a negative impact on SCE&G's current ash beneficial use program, thereby increasing disposal costs.
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.

IV. Supply Side of the IRP

Existing Supply Resources

SCE&G owns and operates ten (10) coal-fired fossil fuel units (2,439 MW), eight (8) combined cycle gas turbine/steam generator units (gas/oil fired, 1,330 MW), sixteen (16) peaking turbine units (355 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 5,011 MW. These ratings, which are updated at least on an annual basis, reflect the expectation for the coming summer season. 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 5,702 MW. This is summarized in the table on the following page.

The bar chart below shows the actual 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

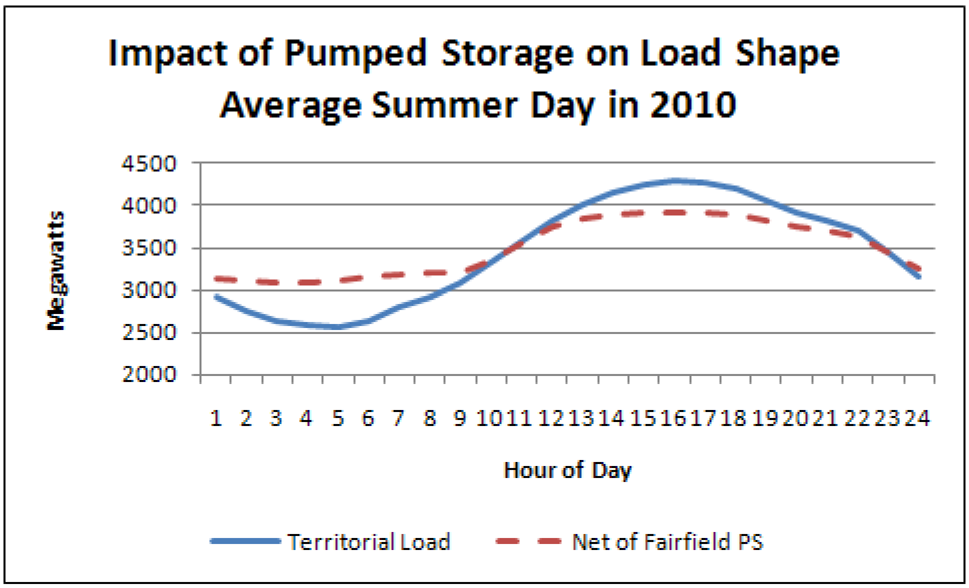
The following table shows the generating capacity that is available to SCE&G.

	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	605
Cope - Cope, SC	1996	420
Kapstone – Charleston, SC	1999	90
Total Coal-Fired Steam Capacity		2,529
Nuclear:		
V. C. Summer - Parr, SC	1984	644
I. C. Turbines:		
Hardeeville, SC	1968	12
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	128
Urquhart No. 4 – Beech Island, SC	1999	48
Urquhart Combined Cycle – Beech Island, SC	2002	458
Jasper Combined Cycle – Jasper, SC	2004	872
Total I. C. Turbines Capacity		1,685
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:		5,702

* 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.

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.



In effect the Fairfield Pumped Storage Plant shaved about 340MWs from the daily peak times of 2:00pm through 6:00pm and moved about 3.1% 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 events.

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 COL is expected to be issued 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. Immediately after its addition, the percentage of baseload capacity on the system was about 74%. Currently it is only 56%. With the addition of these two nuclear units, the percentage of baseload capacity will be about 62%. Regarding fuel diversity, the current mix of capacity is 11% nuclear, 44% coal and 30% natural gas. With the addition of this nuclear capacity, the mix will be 28% nuclear, 33% coal and 26% natural gas. Finally, since nuclear power is a non-emitting resource, the Company's emissions 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 meeting new environmental regulations. 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.

Scenario Planning and Risk

There is considerable uncertainty associated with planning for the future. Two principle sources of uncertainty are the economy and the state of federal environmental regulations. The economy has been officially out of recession since June 2009, but growth has been slow and seems only now to be reaching its normal long term growth rate of 3% or so. Regarding federal regulations, the Environmental Protection Administration (EPA) has issued a number of regulations that will have a significant effect on the electric utility business. Some members of Congress are trying to stop or at least postpone implementation of these regulations so that Congress has time to introduce alternative legislation and also to provide more recovery time for the weak economic recovery. SCE&G believes that its resource plan, anchored by the addition of two new nuclear plants and its new portfolio of energy efficiency measures, represents a very robust plan providing flexibility under many different future scenarios.

Because the future is so uncertain, it is a worthwhile exercise to consider alternative assumptions that might form various future conditions. Three future scenarios are considered below: a greener scenario, a higher growth scenario and a base case, business-as-usual scenario.

A Greener Scenario: The EPA was created on May 2, 1971 to implement the various requirements included in the Clean Air Act of 1970. Ever since then the utility industry has been adjusting its plans to comply with an ever increasing array of environmental regulations. Clearly every reasonable scenario of the future should contain environmental regulations and mandates; it is just a question of degree in severity and implementation timeline. As discussed earlier the EPA has issued its “Tailoring Rule” which brings utilities’ green house gas emissions, in particular, CO_2, under Clean Air Act regulations. The rules are not finalized and it is unclear what the best available control technology (“BACT”) will be but carbon capture and sequestration (“CCS”) is a likely candidate not only for new coal plants but at some point for existing coal plants as well. Since burning natural gas results in CO_2 emissions as well, it seems only logical that these same rules for coal generation will apply to natural gas-fired generation at some point in the future, at least to combined cycle plants. Based on currently proposed EPA regulations, existing coal plants may require very costly retrofit equipment. For example, depending on the final mercury rules, more investment may be required. A wet scrubber in combination with an SCR can remove most of the mercury from the flue gas but this may not meet new guidelines. Also closed loop cooling may be required as part of the EPA's recent 316(b) regulations dealing with impingement of marine life. If these and other regulations are implemented, the result will be the forced retirement of much coal capacity in the country. Naturally this capacity will need to be replaced along with the additional capacity planned to meet load growth. This should result in higher power prices going forward. A greener future is also likely to have a renewable portfolio standard ("RPS") or at least a clean energy standard along with an option or requirement to use energy efficiency as part of the resource plan. A clean energy standard seems to be gaining favor over an RPS because it would be less harmful to the economy and much more equitable regionally, particularly in the southeast where the potential for wind and solar power is limited. When facing a "Greener Scenario" in which environmental regulations continue on their present trajectory or ratchet up, SCE&G believes that having two nuclear plants in its resource expansion plan makes a lot of sense

About Shale Gas: Shale Gas promises to be a boon for the natural gas industry, potentially providing large volumes of gas at low prices. SCE&G certainly hopes that this potential is realized because SCE&G is in a good position to take advantage of this boon since currently 30% of its capacity is fired by natural gas. However the natural gas business is particularly uncertain. Only a few years ago imported LNG was the much heralded new source of gas that would meet the market's demand. Who knows how this business will change in the next few years. The EPA has designated CO_2 as an air pollutant. If this attitude persists, it does not seem reasonable to expect an unencumbered development of shale gas. Even if relatively low gas prices survive regulatory impacts, a requirement that carbon capture and sequestration be added to gas-fired generation will increase the cost of building and operating such a plant, making the economics very challenging. Today energy is an international business. The economics of supply and demand in the world market is likely to put upward pressure on the price of gas in the United States. Already there are reports of at least two companies seeking a license to export LNG gas. It does not seem reasonable to expect the price of natural gas to trade at several multiples of that in the US, at least not for any length of time. Entrepreneurs will act to increase their profits and close the gap. A risk-averse utility trying to protect its customers from fuel price variability will develop a resource portfolio that is balanced by several types of fuels. This is the approach being taken by SCE&G.

A High Growth Scenario: SCE&G must consider the prospect of a higher growth scenario. It is possible that the economy might rebound quickly to pre-recession levels. The combination of pent-up demand, good governmental policies and the international market could spur growth in the country. Additionally South Carolina might expand even faster than other states if industry, whether domestic or international, locates in the state and population migration increases either for new jobs or retirements. If the demand for energy in its service territory grows faster than expected, SCE&G plans to meet the increased demand with capacity purchases until the first new nuclear unit is online. The capacity should be available for purchase but clearly environmental regulations that force the early retirement of coal plants will limit purchase options. This is a short term problem that SCE&G will have to manage if it comes to fruition but regardless, in the longer term, the need for the new nuclear units would only be greater in a high growth scenario.

Some New Technologies: Like all utilities, SCE&G tries to keep abreast of any new technologies that might have a significant impact on the electric business. Here are a few to consider:

- Electric Vehicles: As battery technology improves and economies of scale reduce their purchase price there may be an electric vehicle in every household which would create a significant load on the system. Utilities are expecting that time of use rates will force most of the charging load to occur off-peak and thereby lessen the need for additional generating capacity. However, there will still be a need for energy and utilities will need more base load generation, such as a nuclear plant would provide, to meet that need.
- SmartGrid and Home Area Networks: SmartGrid and smart meters will allow two-way communication between the utility and the customer. An important goal of this technology is to provide the customer with current information creating a greater awareness of his energy consumption and increasing his willingness to participate in programs to lower and alter his consumption. In combination with a Home Area Network and smart appliances, there is the possibility of making a customer's conservation efforts automatic by cycling or shutting off appliances during high cost periods with an in-home computer system receiving price information over the smart grid. Ultimately this technology should tend to flatten the system load curve and require more reliance on base load generation.

The Base Case Scenario: SCE&G's base case resource plan assumes a return to the normal long term rate of economic growth and a moderation in environmental regulations. Specifically SCE&G assumes that it will not be forced to retire any coal plants in the next few years but instead will have the flexibility to retire plants, if it makes sense to do so, over a longer time frame. The forecast does not reflect an impact from electric vehicles or from the SmartGrid. It assumes that there will be a cost to CO_2 emissions but these will be moderate. The plan assumes that there will not be a renewable power standard mandated at either the national or state level. The plan allows for the implementation of a clean energy standard but with a resource plan anchored by the addition of two nuclear plants such a standard is easily met. The forecast assumes that customers participate in our portfolio of energy efficiency programs and that these programs are effective in reducing load and energy growth on the system.

Risk Analysis: Because of the many unknown factors described in the scenarios above and because of other factors described below, the Company feels that the level of uncertainty about the future is particularly acute at the present time. Following are a few more sources of uncertainty directly affecting the load forecast that should be considered.

1. The nation and SCE&G's service territory are still recovering from 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 have raised awareness and encouraged or mandated energy efficiency, the need for power nevertheless continued to grow. Based on this experience, SCE&G looks to the future with uncertainty when it considers the proliferation of electronic devices such as large screen TVs and electronic billboards and the possible development of a large market for electric vehicles.

Due to the uncertainty described above and that highlighted by consideration of possible future scenarios, it is particularly important to develop a range of possible forecast outcomes. By developing a resource plan to meet a base, high and low forecast, the Company will highlight future risks and can better plan to meet the energy needs of its customers. When generating forecast scenarios, it is important to determine a reasonable methodology to derive alternative energy and peak demand growth patterns. A scenario based on an unreasonably high or low forecast would not be useful. The approach chosen is to review the historic record of SCE&G's energy sales, by class, over the past forty years, and then establish "high" and "low" growth rates from that sample. This offers several advantages. First, determination of growth rates by class should give a better estimate of territorial sales since the estimate is based on a higher level of detail. For example, residential growth percentages were developed by examination of customer growth and average use changes over time. Secondly, the future growth prospects of the major customer classes will vary, and it is possible to explicitly capture the impact of the different growth rates on total sales. Finally, a review of historic data allows one to see the major events which have occurred in the past and their impact on SCE&G's electric sales, and then to incorporate those patterns into the growth scenarios.

The nearby table shows the 15-year annual compound growth rate in sales that result from the base forecasting methodology for major customer classes. 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 75% of that reflected in the base forecast while for the low load scenario, it was assumed that 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 the 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, then the low load scenario may be a better representation of future growth.

Assumptions For High and Low Scenarios				
	15-Year Projection of Annual Growth			
	Base Forecast	High Load Scenario	Low Load Scenario	Pre-Recession History
Residential	2.0%	2.7%	1.2%	2.7%
Commercial	2.3%	2.8%	1.8%	3.2%
Industrial	1.3%	2.3%	0.5%	2.6%
Municipal	1.4%	2.2%	0.6%	4.0%

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

Firm Peak Demand Scenarios (MWs)					
Year	**Low**	**Delta**	**Base**	**Delta**	**High**
2011	4,726	0	4,726	0	4,726
2012	4,807	0	4,807	0	4,807
2013	4,678	-216	4,894	207	5,101
2014	4,720	-269	4,989	247	5,236
2015	4,750	-312	5,062	299	5,361
2016	4,781	-357	5,138	350	5,488
2017	4,815	-405	5,220	399	5,619
2018	4,840	-451	5,291	452	5,743
2019	4,862	-500	5,362	509	5,871
2020	4,887	-552	5,439	572	6,011
2021	4,942	-594	5,536	621	6,157
2022	5,004	-637	5,641	664	6,305
2023	5,070	-678	5,748	708	6,456
2024	5,133	-719	5,852	753	6,605
2025	5,198	-761	5,959	802	6,761

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 801 MWs to the demand in 2025. 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 762 MWs less than its base plan.

Projected Loads and Resources

SCE&G's resource plan for the next 15 years is shown in the table labeled "SCE&G Forecast Loads and Resources – 2011 IRP – BASE Load Scenario" 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 base load capacity.

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 - 2011 IRP - BASE Load Scenario

	YEAR	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Load Forecast																
1	Baseline Trend	4961	5056	5178	5310	5419	5524	5638	5746	5858	5980	6090	6205	6322	6436	6554
2	EE Impact	-10	-24	-59	-96	-132	-161	-193	-230	-271	-316	-329	-339	-349	-359	-370
3	Gross Territorial Peak	4951	5032	5119	5214	5287	5363	5445	5516	5587	5664	5761	5866	5973	6077	6184
4	Demand Response	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225
5	Net Territorial Peak	4726	4807	4894	4989	5062	5138	5220	5291	5362	5439	5536	5641	5748	5852	5959
6	Firm Contract Sales	250	250													
7	Total Firm Obligation	4976	5057	4894	4989	5062	5138	5220	5291	5362	5439	5536	5641	5748	5852	5959
System Capacity																
8	Existing	5702	5702	5702	5702	5702	5702	6226	6226	6226	6630	6630	6630	6630	6630	6630
	Additions															
9	Peaking/Intermediate															93
10	Baseload						614			614						
11	Other						-90			-210						
12	Total System Capacity	5702	5702	5702	5702	5702	6226	6226	6226	6630	6630	6630	6630	6630	6630	6723
13	Firm Annual Purchase															
14	Total Production Capability	5702	5702	5702	5702	5702	6226	6226	6226	6630	6630	6630	6630	6630	6630	6723
Reserves																
15	Margin (L14-L7)	726	645	808	713	640	1088	1006	935	1268	1191	1094	989	882	778	764
16	% Reserve Margin (L15/L7)	14.6%	12.8%	16.5%	14.3%	12.6%	21.2%	19.3%	17.7%	23.6%	21.9%	19.8%	17.5%	15.3%	13.3%	12.8%
17	% Capacity Margin (L15/L14)	12.7%	11.3%	14.2%	12.5%	11.2%	17.5%	16.2%	15.0%	19.1%	18.0%	16.5%	14.9%	13.3%	11.7%	11.4%

SCE&G Forecast of Summer Loads and Resources - 2011 IRP - HIGH Load Scenario

	YEAR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Load Forecast																
1	Baseline Trend	4961	5056	5370	5533	5685	5833	5989	6140	6299	6473	6628	6784	6943	7099	7263
2	EE Impact	-10	-24	-29	-48	-66	-80	-97	-115	-135	-158	-164	-169	-174	-180	-185
3	Gross Territorial Peak	4951	5032	5341	5485	5619	5753	5892	6025	6164	6315	6464	6615	6769	6919	7078
4	Demand Response	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225
5	Net Territorial Peak	4726	4807	5116	5260	5394	5528	5667	5800	5939	6090	6239	6390	6544	6694	6853
6	Firm Contract Sales	250	250													
7	Total Firm Obligation	4976	5057	5116	5260	5394	5528	5667	5800	5939	6090	6239	6390	6544	6694	6853
System Capacity																
8	Existing	5702	5702	5702	5702	5702	5702	6316	6409	6502	7116	7116	7116	7209	7395	7581
	Additions															
9	Peaking/Intermediate							93	93				93	186	186	93
10	Baseload						614			614						
11	Other															
12	Total System Capacity	5702	5702	5702	5702	5702	6316	6409	6502	7116	7116	7116	7209	7395	7581	7674
13	Firm Annual Purchase			50	200	350										
14	Total Production Capability	5702	5702	5752	5902	6052	6316	6409	6502	7116	7116	7116	7209	7395	7581	7674
Reserves																
15	Margin (L14-L7)	726	645	636	642	658	788	742	702	1177	1026	877	819	851	887	821
16	% Reserve Margin (L15/L7)	14.6%	12.8%	12.4%	12.2%	12.2%	14.3%	13.1%	12.1%	19.8%	16.8%	14.1%	12.8%	13.0%	13.3%	12.0%
17	% Capacity Margin (L15/L14)	12.7%	11.3%	11.1%	10.9%	10.9%	12.5%	11.6%	10.8%	16.5%	14.4%	12.3%	11.4%	11.5%	11.7%	10.7%

SCE&G Forecast of Summer Loads and Resources - 2011 IRP - LOW Load Scenario

	YEAR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Load Forecast																
1	Baseline Trend	4961	5056	4977	5066	5139	5206	5282	5353	5425	5506	5577	5653	5731	5807	5885
2	EE Impact	-10	-24	-74	-121	-164	-201	-242	-288	-338	-394	-410	-423	-436	-449	-462
3	Gross Territorial Peak	4951	5032	4903	4945	4975	5005	5040	5065	5087	5112	5167	5230	5295	5358	5423
4	Demand Response	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225	-225
5	Net Territorial Peak	4726	4807	4678	4720	4750	4780	4815	4840	4862	4887	4942	5005	5070	5133	5198
6	Firm Contract Sales	250	250													
7	Total Firm Obligation	4976	5057	4678	4720	4750	4780	4815	4840	4862	4887	4942	5005	5070	5133	5198
System Capacity																
8	Existing	5702	5702	5702	5702	5702	5702	5986	5986	5986	6200	6200	6200	6200	6200	6200
	Additions															
9	Peaking/Intermediate															
10	Baseload						614			614						
11	Other						-330			-400						
12	Total System Capacity	5702	5702	5702	5702	5702	5986	5986	5986	6200	6200	6200	6200	6200	6200	6200
13	Firm Annual Purchase															
14	Total Production Capability	5702	5702	5702	5702	5702	5986	5986	5986	6200	6200	6200	6200	6200	6200	6200
Reserves																
15	Margin (L14-L7)	726	645	1024	982	952	1206	1171	1146	1338	1313	1258	1195	1130	1067	1002
16	% Reserve Margin (L15/L7)	14.6%	12.8%	21.9%	20.8%	20.0%	25.2%	24.3%	23.7%	27.5%	26.9%	25.5%	23.9%	22.3%	20.8%	19.3%
17	% Capacity Margin (L15/L14)	12.7%	11.3%	18.0%	17.2%	16.7%	20.1%	19.6%	19.1%	21.6%	21.2%	20.3%	19.3%	18.2%	17.2%	16.2%

V. Transmission System Assessment and 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 assesses 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 Georgia. Also, SCE&G on a periodic and ongoing 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. 2010 January OASIS Study
2. 2010 April OASIS Study
3. 2010 July OASIS Study
4. 2010 October OASIS Study
5. SERC NTSG Reliability 2010 Summer Study
6. SERC NTSG Reliability 2010/2011 Winter Study
7. SERC LTSG 2016 Summer Future Year Study
8. VACAR 2015 Summer Study
9. SERC East/RFC 2010 Summer Study
10. SERC East/RFC 2010/2011 Winter 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
LTSG – Long Term Study Group of SERC
VACAR – Virginia-Carolinas area
RFC – Reliability First Corporation

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 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"). Numerous SCRTP stakeholder meetings have occurred and activities associated with this process can be reviewed and followed at the SCRTP website (www.scrtp.com).

Eastern Interconnection Planning Collaborative (EIPC)

The Eastern Interconnection Planning Collaborative ("EIPC") was initiated by a coalition of regional Planning Authorities. These Planning Authorities are entities listed on the NERC compliance registry as Planning Authorities and represent the entire Eastern Interconnection. The EIPC was founded to be a broad-based, transparent collaborative process among all interested stakeholders:

- State and Federal policy makers

- Consumer and environmental interests
- Transmission Planning Authorities
- Market participants generating, transmitting or consuming electricity within the Eastern Interconnection

The EIPC will provide a grass-roots approach which builds upon the regional expansion plans developed each year by regional stakeholders in collaboration with their respective NERC Planning Authorities. This approach will provide coordinated interregional analysis for the entire Eastern Interconnection guided by the consensus input of an open and transparent stakeholder process.

The EIPC represents a first-of-its-kind effort, to involve Planning Authorities in the Eastern Interconnection to model the impact on the grid of various policy options determined to be of interest by state, provincial and federal policy makers and other stakeholders. This work will build upon, rather than replace, the current local and regional transmission planning processes developed by the Planning Authorities and associated regional stakeholder groups within the entire Eastern Interconnection. Those processes will be informed by the EIPC analysis efforts including the interconnection-wide review of the existing regional plans and development of transmission options associated with the various policy options.

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), rate, and by a statistical estimate of weather sensitivity. 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. Daily heating and cooling degree data for Columbia and Charleston are also available historically, and were projected using a 15-year average of the daily values. 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 DSM 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[1] 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.

Simple plots of average use over time revealed significant changes in average use for some customer groups. 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, $f(B) = 1 – f_1 B - \ldots - f_1 B^p$
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)[2] 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. SAS Institute, Inc., SAS/STAT[tm] Guide for Personal Computers, Version 6 Edition. Cary, NC: SAS Institute, Inc., 1987.
2. 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-nine large industrial customers were individually projected. The residential class was disaggregated into several sub-groups, starting first with rate. Next, a regression analysis was done to separate customers into two categories, “more weather-sensitive” and “less weather sensitive”. Generally speaking, the former group is associated with electric space heating, and the latter those without electric space heating. Finally, these categories were divided by housing type (single family, multi-family, and mobile homes). Each municipal and cooperative account represents a forecasting group and was 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 energy, which is the difference between generation and sales and represents for the most part system losses, is usually about 4.3% 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 energy 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	Three 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 REG and PROC AUTOREG of SAS were used to estimate all regression models. PROC REG was used for preliminary model specification, elimination of insignificant variables, and also 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., gas price spike in 2005 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. 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, savings identified from SCE&G's demand-side management programs were removed. Finally, 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 three primary explanatory variables, total territorial energy, customers, 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 element was measured by two variables: the average of heating degree days (HDD) experienced on the winter peak day in Columbia and Charleston and the minimum temperature on the peak day. 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. 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.