Through innovations in energy and environmental policies, programs, and technologies, the Southern States Energy Board enhances economic development and the quality of life in the South.
Energy is the lifeblood of this nation and the soul of our economic development. The variability of our everyday lives depends on whether we have the necessary energy to produce fuels, products, electricity, and materials for transport, improve our health, and serve our lifestyles throughout the world. The energy sector of an economy truly determines the wealth and welfare and the quality of life of nations. Between now and 2040, the U.S. Energy Information Administration (EIA) is predicting that our planet’s energy consumption will rise by more than 50 percent, driven largely by growth factors in the developing world. Rising prosperity is a major factor that will drive a new expansion in the outlook for global energy demand. Half of this expansion is expected to come from China and India, where a burgeoning middle class with an appetite for energy is poised for long-term economic growth.

EIA has determined that about 80 percent of world energy use by 2040 will be supplied by fossil fuels. Fossil fuels remain the largest sources of energy. Overall, natural gas is the most rapidly growing fuel globally and worldwide at almost two percent per annum with increasing supplies of tight gas, shale gas, and coalbed methane supporting this escalation. Nuclear power is expected to increase from 2.6 trillion kilowatt hours currently to 5.5 trillion kilowatt hours by 2040. The contributions from renewables are driven primarily by hydroelectric power, and even the trend to renewable energy is pronounced growth over the past decade with a continued upward trend in the future.

Why are these figures on world energy consumption so important to our southern states and territories? Primarily because we are witnessing these same trends in the Southern States Energy Board (SSEB) region. There is an Energy Revolution in the South fueling a five trillion dollar economy for our member states and territories with a 55 percent of all the energy used in the United States.Growing three times faster than the national average, energy consumption per capita and per unit of gross domestic product is substantially higher in the South than in the rest of the nation. Due to smart planning by our utilities, low fuel costs and an abundant domestic energy supply, we continue to have the lowest electric rates in America. During the past year, carbon emissions from the energy sector fell to the lowest levels in the past two decades. At the same time, the continued grid stability provided by our coal, natural gas, and nuclear infrastructure has kept this country energy secure, provided jobs for industrial development and manufacturing, and enabled our nation to move out of recession. Our net oil imports fell to the lowest level in 20 years, and we have become the world’s largest exporter of natural gas. If we are able to maintain this dominance, we must stay on the cutting edge of energy research. The Southern States Energy Board is at the helm of fossil energy emissions research through its ongoing Southern Regional Carbon Sequestration Partnership (SECARB). Through the carbon dioxide (CO2) storage project in Cranfield, Mississippi, known as the “Early Test,” we have established a location where novel and traditional monitoring technologies can be field tested at an oil field where large volumes of CO2 are being injected for enhanced oil recovery. Regulatory permitting for CO2 injection wells is one barrier to commercial deployment of carbon capture and storage (CCS) technologies. Development and maturation of an array of monitoring tools in this setting allows researchers to improve assessments of geologic storage resources, understand CO2 behavior in the subsurface, and quantify the predictive ability of reservoir models, all of which demonstrate to the public and regulatory officials CO2 containment and protection of underground sources of drinking water.

The SECARB “Anthropogenic Test” is the world’s first fully integrated CO2 capture, transportation, and storage project utilizing CO2 from a coal-fired power facility. This commercial-scale project is gathering reservoir surveillance data for a regionally extensive geologic formation that holds great promise for large-scale CO2 storage; testing the adaptation of commercially available and experimental monitoring technologies; documenting the legal and regulatory permitting process for all aspects of a CCS project; understanding the coordination required to successfully integrate all components of the project; and establishing a risk assessment and management plan for the integrated system. This project became fully operational in August 2012, and the team has stored more than 750,000 tons of CO2 at the site. It is located at Plant Barry near Mobile, Alabama.

The early stages of this national network of regional partnerships began in 2003, and a decade later the more than $450 million investment by the federal government and our partners has resulted in groundbreaking research that demonstrates the commercial viability of CCS technologies and integrated projects.

On June 25, President Obama released his Climate Action Plan, a document that employs 13 federal agencies to meet the demand for crude oil. Environmental safety and cost-sharing partners has resulted in groundbreaking research that demonstrates the commercial viability of CCS technologies and integrated projects.

Advances in hydraulic fracturing and horizontal drilling have created a huge market for natural gas from shale and low prices have spurred the dash to gas by energy providers. While this boom has continued a low cost energy policy, the EPA is trying to determine how to regulate this abundant, domestic resource. One way is to set standards and guidelines for fracking that impact the price and another means is to devise a regulatory program that underlies all of state rule. Shale development already is regulated by no less than eight federal laws. We need a clear understanding of the roles and responsibilities of the states and the federal government in the development of environmental rules and regulations.

As Chairman of the Southern States Energy Board, I am pleased to support new opportunities to increase the supply of energy resources to the region. On April 10, 2011, I requested that the State Department grant TransCanada the Presidential Permit needed to begin construction of the Keystone XL pipeline. Without a doubt, the Keystone Project is in the best interest of this nation. Economic benefits are clearly stated in the Draft Supplemental Environmental Impact Statement (SEIS) with direct and indirect jobs both in the construction and operation phases translating into $2.05 billion in new tax revenue. Increased revenues to landowners and states are clearly evident and will revitalize communities. Energy security will be enhanced by using domestic resources and those in our North American neighbor, Canada, in our refineries rather than relying on other imports to meet the demand for crude oil. Environmental safety and responsibility are addressed through comprehensive permitting and monitoring procedures.

I was pleased to submit comments to the Secretary of Energy on behalf of the Board in support of the study of macroeconomic impacts of liquified natural gas (LNG) exports from the United States. Exporting LNG is sound national policy and underpins the foreseeable access of domestically produced natural gas to the international energy market. Expansion of LNG sales will help stabilize our domestic market and enhance investment in the development of indigenous gas resources for gas production and processing. At this time, the Federal Energy Regulatory Commission (FERC) and the U.S. Department of Energy have approved three LNG export projects and all are in the Southern States Energy Board region.

In its 53rd year of service to the southern region, the Southern States Energy Board remains true to its mission “to enhance our economic development and the quality of life in the South through innovative energy and environmental programs, policies and technologies.” This has been a year of great accomplishment for the Board and all the very positive news in our state will be better understood as you peruse this document. I commend this 2013 Annual Report of the Southern States Energy Board to you as a definitive record of the accomplishments and success of this exemplary regional organization.
SSEB Executive Committee

ASSOCIATE MEMBERS OFFICERS

ASSOCIATE MEMBERS

Board Members

SSEB’s Associate Members Program is comprised of industry partners who provide an annual contribution to the Board. Membership includes organizations from the non-governmental sector, corporations, trade associations and public advocacy groups. The Associate Members Program provides an opportunity for public officials and industry representatives to exchange ideas, define objectives, and advance energy and environmental planning to improve and enhance the quality of life in the South.

ALABAMA
Governor Robert Bentley
Senator Jim H. Hollis
Senator William H. Rawls
Representative Howard S. Sletten
House Alternate
Representative Michael R. Hamrick
Governor’s Alternate

ARKANSAS
Senator Mike Beebe
Senator Joe Williams
Senator Bob. J. Pierce
Senator Alternate
Mr. Mark Harrison
Governor’s Alternate

FLORIDA
Governor Rick Scott
Senator Ami B. Bouchard
Representative Jose Felix Diaz

GEORGIA
Governor Nathan Deal
Senator Rosa Vernata
Senator Jack Murphy
Senator Alternate
Representative Harry Quinnier
Representative Ron Smith
House Alternate
Mr. Jill Stuckey
Governor’s Alternate

KENTUCKY
Governor Steve Beshear
Senator Branton Smith
Representative Rocky Adkins
Dr. Leonard K. Peters
Governor’s Alternate

LOUISIANA
Governor Bobby Jindal
Senator Robert Amede
Senator Gerald Long
Senator Alternate
Representative Joe Harrison
Representative Raymond E. Garfield, Jr.
House Alternate

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Governor Martin O’Malley
Senator Thomas V. ‘Mac’ Middleton
Delegate: Bruce E. Davis
Delegate Sally P. Stavely
House Alternate
Mr. Chris Champion
Governor’s Alternate

MISSISSIPPI
Governor Phil Bryant
Senator Terry C. Burton
Senator Sean Tindall
Senator Alternate
Representative Gary Stump
Representative Angela Coker-Williams
House Alternate
Mr. Chris Champion
Governor’s Alternate

MISSOURI
Governor Jay Nixon
Senator Mike Kehoe
Representative Jeanie Riddle
Representative Rocky Miller
House Alternate
Mr. Jeff Harris
Governor’s Alternate

SOUTHERN CAROLINA
Governor Nikki Haley
Senator Larry W. Hutto
Senator Thomas C. Alexander
Senator Alternate
Representative Bill J. Young
House Alternate

TENNESSEE
Governor Bill Haslam
Senator Mark Norris
Representative John Ragan
Mr. Robert Martin
Governor’s Alternate

TEXAS
Governor Rick Perry
Representative Myra Crownover
Mr. Barry Smithman
Governor’s Alternate

U.S. VIRGIN ISLANDS
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Mr. Karl Knight
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VIRGINIA
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Senator John C. Watters
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House Alternate
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ALPHA NATURAL RESOURCES
American Coalition for Clean Coal Electricity
American Electric Power
America’s Natural Gas Alliance

COAL UTILIZATION RESEARCH
Coalition for Fair Energy Cuts
Duke Energy
Eastern Coal Council/Coal Leader, Inc.

ENERGY SERVICES, INC.
Enron Electric Institute
Exelon Services, Incorporated
Exelon Mobile
Hoartic International

IN MEMORIAM
Representative Clay Ford, FL
SSEB Board Member
2009-2013

In loving Memory of
Representative Clay Ford, FL
SSEB Board Member
2009-2013

www.sseb.org

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ASSOCIATE MEMBERS

In Loving Memory of
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2009-2013

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MISSISSIPPI/ALABAMA OIL SANDS COMPREHENSIVE RESOURCE ASSESSMENT

The Southern States Energy Board, Geological Survey of Alabama, Mississippi Development Authority, and Mississippi Department of Environmental Quality are conducting a comprehensive resource assessment of oil sands located in Alabama and Mississippi. Oil sands generally occur as natural mixtures of sand, clay, water, and bitumen, a heavy oil. Then extracted from the subsurface, the bitumen is separated from the sand and upgraded to a refinery-ready crude oil. Alabama has the third largest oil sands resource in the United States. Mississippian age oil sands crop out in north-central and northwest Alabama at various locations dispersed throughout a 70-mile belt that extends into northeastern Mississippi. Based on evaluations in the 1980s, the total subsurface reserves are estimated to be 7.5 billion barrels.

The largest commercial oil sands operations are ongoing in the Canadian Province of Alberta. On December 10-14, 2012, the Canadian Consulate’s Office in Atlanta and the Government of Alberta hosted a delegation of eight SSEB members and geologists in Edmonton and Fort McMurray. The delegation participated in this fact-finding mission to better understand the oil sands resources of Alberta; technologies utilized to extract the resource; environmental concerns; regulatory and permitting processes; and the economic impact of developing these resources.

Mississippi Governor Phil Bryant, as Chairman of SSEB, and Alabama Governor Robert Bentley, as Incoming Chairman, jointly signed a Memorandum of Understanding on July 27, 2013, in Mobile, Alabama, recognizing that a partnership between the states, the energy industry, and major utilities can have a positive impact on the successful exploration for, and development of, these resources. This MOU asserts the governors’ support of conducting a comprehensive resources assessment of the oil sands deposits in Alabama and Mississippi. A preliminary study examining the current data and resources available will be prepared in the coming year.

CARBON MANAGEMENT: THE SOUTHEAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP

The Southeast Regional Carbon Sequestration Partnership (SECARB) is a program underway at the Southern States Energy Board to balance the environmental effects of existing and prospective fossil fuel powered electric generating facilities. SECARB is one of seven Regional Carbon Sequestration Partnerships (RCSPs) nationwide funded by the U.S. Department of Energy’s National Energy Technology Laboratory (NETL) and cost sharing partners.

The primary goal of the SECARB Partnership is to promote development of a framework and infrastructure necessary for the validation and deployment of carbon capture and storage (CCS) technologies.

Key to the success of any CCS project is an operator’s ability to predict and monitor the flow of CO2 molecules injected into the subsurface and to communicate this information to stakeholders and regulators. In 2009, the Early Test deployed extensive CO2 monitoring, verification, and accounting technologies at the Cranfield oilfield operated by Denbury Onshore, LLC, near Natchez, Mississippi. This project was the first of the RCSPs to begin CO2 injection and the first to monitor a one million metric ton injection. As of July 2013, the SECARB team has monitored the injection of over 8 million metric tons of CO2. Data collected at Cranfield is utilized by SECARB and researchers worldwide to further refine reservoir models for similar geologic settings. Additionally, the partners have evaluated multiple monitoring, verification and accounting (MVA) technologies to determine their commercial viability in a CO2 injection setting. In 2010, the international Carbon Sequestration Leadership Forum recognized the Early Test project at Cranfield for its outstanding accomplishments in advancing CCS MVA technologies.

Knowledge gained from the Early Test is being applied at the Anthropicogen Test, where CO2 injection began on August 20, 2012. This accomplishment marks another significant milestone for the team as it operates the world’s first fully integrated CO2 capture, transportation, and injection project utilizing anthropogenic (man-made) CO2 from a coal-fired power plant. Under separate funding, the CO2 is captured at Alabama Power Company’s James M. Barry Electric Generating Plant located in Bucks, Alabama. The CO2 is transported 12 miles by pipeline and permanently stored within a deep saline formation at the Citronelle Power Company’s James M. Barry Electric Generating Plant located in Bucks, Alabama. The CO2 is transported 12 miles by pipeline and permanently stored within a deep saline formation at the Citronelle power plant operated by Denbury. In one year, more than 75,000 metric tons of CO2 have been injected and stored at the site. Up to 300,000 metric tons of CO2 will be injected over the life of the project. The SECARB partners have deployed proven and experimental MVA technologies to monitor CO2 movement in the subsurface during and post-injection.

According to the U.S. DOE, the project “will help demonstrate the feasibility of carbon capture, utilization and storage (CCUS), considered by most energy experts as an important option for meeting the challenge...”
of helping to reduce atmospheric CO2 emissions linked to potential climate change.” CO2-enhanced oil recovery (CO2-EOR) is a primary business driver for commercial CCUS deployment. An integrated system like the Anthropogenic Test is representative of the technical and business arrangements necessary for CO2-EOR operations utilizing anthropogenic CO2 sources.

Through a “Knowledge Sharing” activity established in 2011, the SECARB partners are facilitating interaction among scientists, researchers, and industry during which lessons learned from CCS projects around the globe are shared to further advance the technologies. During this year, SSEB and its SECARB partners have participated in several international workshops on the topics of MVA technologies and risk management protocols. In addition, several members of the SECARB team have been selected as members of the U.S. Technical Advisory Group, approved by the American National Standards Institute, to mirror the International Organization for Standardization (ISO) Technical Committee (TC)-265 effort for the development of guidance and standards for carbon capture, transportation, and geological storage. The TC-265 has five working groups focused on capture, transportation, quantification and verification, and cross-cutting issues. Participation in this endeavor will ensure both technically sound and the U.S. consensus position is represented.

SECARB continues to characterize the region’s onshore and offshore geologic storage options; monitor federal and state regulatory and legislative activities; and support education and outreach efforts related to the program. Please visit the SECARB website at www.searbon.org for the current status of our projects and related activities, upcoming meetings and workshops, social media subscriptions, and more.

**SOUTHEAST REGIONAL CARBON SEQUESTRATION TECHNOLOGY TRAINING PROGRAM**

Carbon capture, utilization, and storage (CCUS) technologies have tremendous potential for reducing carbon dioxide (CO2) emissions and mitigating global climate change. These technologies encourage economic growth and have manageable influence on energy use. Deploying these technologies on a commercial scale will require expanding the workforce, including geologists, engineers, scientists and technicians, trained in CCS specialties.

In 2009, the U.S. Department of Energy’s (DOE) National Energy Technology Laboratory (NETL) selected seven projects to help develop regional sequestration technology training centers in the United States. The Southeast Regional CO2 Sequestration Technology Training Program (SECARB-Ed) was managed and administered by the Southern States Energy Board (SSEB) from November 16, 2009, to November 15, 2012. During this performance period the efforts of SECARB-Ed and partners resulted in a total of 1,951 professional development hours (PDHs) awarded to 1,131 participants.

**CLEAN COAL AND ADVANCED ENERGY TECHNOLOGIES**

Increasing the use of innovative coal technologies to make coal cleaner and more efficient are the purviews of the Southern States Energy Board’s Committee on Clean Coal and Energy Technologies Collaboration. This committee is one of the board’s most active government and industry partnerships. The membership and projects of the committee stretch across the world and include an interface with the World Energy Council and the international Carbon Sequestration Leadership Forum. These collaborations enable the committee to pursue domestic and international policies and programs that benefit developing countries as well as the southern region.

The SSEB clean coal committee is a sponsor of the Eastern Coal Council annual meeting and the annual conference of the Gasification Technologies Council for state energy regulators. The board also endorses and provides faculty support to the Research Experience in Carbon Sequestration and hosts an annual legislative briefing for state legislative leaders.

Emphasis of the committee this past year has focused on state energy profiles and the changing pattern of energy production, consumption, electricity use, fuels and exports across the region. Developed in 2012 in cooperation with the Kentucky Department of Energy Development and Independence, this SSEB report is a current view of energy resource use in the South. Other highlights are the comparison of the design of legislation regarding carbon capture and storage of CO2 and greenhouse gas legislation in the states; the development of CO2 pipelines; EPA rules and regulations and their impacts on jobs and the economy; support for progress on siting and development of new power plants including Mississippi Power’s Plant Ratcliffe; CO2
Another valuable benefit of the availability of the cooperative agreement funding is development of transport. The DOE complex. SRS has conducted approximately 1,600 shipments amassing nearly 2.5 million miles. Utilizing this funding, our region has helped immensely in reducing the overall footprint for cleaning up.

For the current fiscal year, SSEB will distribute over $1 million dollars towards this endeavor. A key goal is to develop the public-private partnerships necessary to ensure a value-added energy industry. College-level education and training for coal miners and mine safety issues remain a priority.

**TRANSURANIC WASTE TRANSPORTATION**

For numerous years, shipments of Cold War era bomb making containments routed to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico, have served as the model U.S. Department of Energy (DOE) transportation campaign. A key and constant contributor to the success of this program has been the involvement of SSEB’s Transuranic Waste Transportation (TRU) Working Group. Like all of SSEB’s radioactive materials transportation committees, the TRU working group brings together a cadre of radiological health professionals and emergency response personnel to aid in the planning and development of a comprehensive transportation program for the corridor states in the region. As it pertains to the South, these shipments of transuranic waste generated from the production of nuclear weapons originate at either the Oak Ridge National Laboratory (ORNL) in Tennessee or the Savannah River Site (SRS) in South Carolina. To prepare the host states and the others impacted by these shipments, SSEB established a cooperative agreement with DOE’s Carlsbad Field Office to support developing public outreach programs, emergency response training, equipment purchasing and general planning activities. For the current fiscal year, SSEB will distribute over $1 million dollars towards this endeavor.

Utilizing this funding, our region has helped immensely in reducing the overall footprint for cleaning up the DOE complex. SRS has conducted approximately 1,600 shipments amassing nearly 2.5 million miles of safe transport to WIPP. The ORNL is completing its fifth year of participation in the campaign, but has already exceeded 100 movements of TRU waste and is steadily approaching 200,000 miles of safe transport.

Another valuable benefit of the availability of the cooperative agreement funding is development of training programs and exercises. The WIPPTREX is one such exercise that allows states to test the level of preparedness of first responders in the event of an accident involving TRU waste. The next scheduled WIPPTREX will occur in Andrews, Texas, in December 2013.

**FOREIGN RESEARCH REACTOR SPENT NUCLEAR FUEL PROGRAM**

The Global Threat Reduction Initiative or GTRI is a comprehensive transportation program led by the U.S. Department of Energy (DOE). It is the mission of GTRI to secure, manage or retrieve U.S. origin radiological material worldwide to uphold the nation’s non-proliferation objectives. Since 1994, the Southern States Energy Board (SSEB) has been involved in this process by coordinating the planning efforts associated with the return of shipments of spent fuel from foreign countries. The impetus for this endeavor hails from the “Atoms for Peace” program which was a U.S. policy from the 1940’s that encouraged foreign countries to use nuclear technology for research and medical purposes as opposed to military applications. Moving forward to the present time, the department has established a long term return plan for these materials. Based upon the composition of the fuel, the shipments will be destined for either the Savannah River Site (SRS) or the Idaho National Laboratory (INL). For those shipments being transported to the SRS facility in our region or cross-country to INL, SSEB relies on the expertise of its radioactive materials committee members to aid in the development of a safe, efficient, and effective transportation campaign.

In collaboration with DOE, the aforementioned committee representatives have worked diligently to provide security, inspections, and overall planning logistics for the safe receipt of 50 shipments from 31 countries by way of the Joint Base Charleston-Weapons Station in North Charleston, South Carolina. The most recent shipment received at SRS hailed from Italy. Next year shipments are expected from Canada, Switzerland, and the United Kingdom before the program terminates in 2019.

**SOUTHERN EMERGENCY RESPONSE COUNCIL**

The Southern Emergency Response Council (SERC) is a mutual aid compact formalized by 14 southern governors in 1972 to offer state-to-state assistance in the case of a radiological incident involving a nuclear power plant. The SERC signatory states include: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

The actual plan which embodies the spirit of SERC and documents how the procedures would be conducted in the event of such an emergency is the Southern Mutual Radiation Assistance Plan or SMRAP. Created as a blueprint for coordinating radiological emergency assistance capabilities among participating states in the southern region, SERC representatives review, revise, and administer SMRAP on an annual basis to reflect changes in state emergency response capabilities and equipment. This document outlines...
the mutual aid agreement, the implementation process, emergency response contacts, and available state resources. As a part of the scope of this endeavor, SSEB acts as regional coordinator to simulate the activation of the SMRAP during state nuclear power plant exercises. In the past year, the states of North Carolina and Virginia issued a courtesy notification during their drills, but did not request SMRAP activation.

A SERC meeting is held once per year in conjunction with the Organization of Agreement States meeting. This gathering allows members the opportunity to discuss matters related to SMRAP. The group met in Reno, Nevada, this year to ratify SMRAP. One popular topic amongst members was preparing for the Federal Emergency Management Agency mandated hostile action based exercise to test the competencies of nuclear power plants to respond to an aggressive act such as a terrorist attack.

**Radioactive Materials Transportation**

The Southern States Energy Board’s Radioactive Materials Transportation Committee is a collaboration of gubernatorially appointed state emergency response planners, radiological health officials, and other state agency professionals. Presently, the charge of the committee is to support the efforts of the Nuclear Fuels Storage Transportation and Planning Project (NFST) within the Office of Nuclear Energy (DOE-NE). The NFST is responsible for the planning and implementation of the recommendations offered by the Blue Ribbon Commission on America’s Nuclear Energy Future. As such, the board entered a four-year cooperative agreement with DOE-NE in July 2012, to advocate on behalf of the region in the development of policies associated with the Department of Energy’s high-visibility shipments of radioactive materials.

In May of 2013, the committee participated in the National Transportation Stakeholders Forum (NTSF) in Buffalo, New York. During this meeting they worked with their regional counterparts to engage in planning efforts for radioactive materials shipping campaigns taking place throughout the DOE complex.

Currently, the committee is involved in many programs designed to support the establishment of a national transportation system for shipments of spent nuclear fuel and high-level radioactive waste to interim storage sites and/or repositories. One such task is participating in the working group whose goal is to help facilitate the operational aspects of Section 180(c) of the Nuclear Waste Policy Act. Through its involvement in this important group, the committee will work with others to decide how best to provide states with training and technical assistance for shipments that would traverse their jurisdiction. A future endeavor of the committee for the upcoming year is to provide a radiation specialist course within the region to help responders analyze a hazardous materials incident involving radioactive materials in order to determine the complexity of the problem and plan for potential outcomes.

**Consortium for Advanced Simulation of Light Water Reactors**

The Consortium for Advanced Simulation of Light Water Reactors (CASL) is among the newest projects in the board’s nuclear energy portfolio. CASL is a five year, $122 million dollar effort sponsored by the U.S. Department of Energy (DOE) to create an energy innovation hub to foster the development of the next generation of nuclear reactors.

CASL’s mission is to improve nuclear reactor performance through extremely accurate simulation of reactor performance using world-class computing power. Replicating real-time conditions within a nuclear reactor is a key objective for CASL and represents a step beyond current capabilities critical to supporting increased performance of the nuclear energy industry.

Through new insights afforded by its advanced modeling and simulation technology, CASL will explore key nuclear energy industry challenges in order to increase the power from each reactor; more effectively burn the nuclear fuel in the reactor; and extend the life of nuclear plants beyond current years, while also providing higher confidence in enhanced nuclear safety.

Headquartered at DOE’s Oak Ridge National Laboratory (ORNL), the ‘virtual reactor’ will simulate power plant operations, and computer models will be used to reduce capital and operating costs per unit of energy, safely extending the lifetime of existing U.S. reactors and reducing nuclear waste volume generated by enabling higher fuel burn-ups.

SSEB staff participates on the CASL communications group that is informing and educating stakeholders and decision-makers nationwide regarding the achievements and opportunities created by CASL.

**Energy and Environment Legislative Priorities and Analysis**

The Southern States Energy Board’s Annual Legislative Digest serves as a compendium of energy and environmental legislation passed by the board’s 18 member states and territories. For more than four decades, SSEB has published the digest as a reference tool and guide for state legislators and their staffs. The digest thoroughly examines and tracks legislative trends state by state.

During the 2013 legislative sessions, the southern states passed approximately 750 energy and environmental bills. As technology advances in the oil and natural gas industries, SSEB member states continue to address issues surrounding natural gas and petroleum development. Within the digest, there are many bills relating to pipeline infrastructure development; severance taxes; and landowner notification as well as the rapidly emerging market for compressed and liquefied natural gas vehicles. States rich in oil and gas resources are tackling the potential environmental, economic, and social impacts arising from exploration and pipeline activities. Our member states continue to address infrastructure and regulatory challenges as the South’s oil and gas resources help lead the way to American energy independence.

As the South continues to experience tremendous growth, all 16 SSEB member states passed bills related to inland water resource management and conservation. Other southern states addressed water quality and pollution control. States continue to provide responsible, thoughtful environmental leadership as eight SSEB member states enacted measures related to air quality and pollution control. Finally, SSEB member states addressed important economic development goals and quality of life issues through legislation related to energy efficiency; incentives to support the development of renewable energy enterprises and economic zones; and increased criminal penalties for metal theft and utility tampering.

**Enabling Technology**

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The Southern States Energy Board (SSEB) Associate Members program was founded in 1984 by Governor John Y. Brown of Kentucky when he was the organization’s chairman. The associate members provide invaluable expertise and advice regarding critical energy and environmental policy including the social and economic aspects of state and federal legislation and its effects on the member states and territories. This year 10 new members joined the SSEB Associate Members. With increasing interest from the region’s leading energy industries and organizations, SSEB gains a broad depth of knowledge and diverse perspectives on the region’s economy.

SSEB’s commitment to advancing clean energy technologies creates numerous opportunities to work with the national energy laboratories. The National Energy Technology Laboratory (NETL) is the prime research arm of the U.S. Department of Energy for fossil energy. SSEB works closely with NETL in achieving national and international goals in carbon management. The Southeast Regional Carbon Sequestration Partnership (SECARB) is a showcase for the collaboration of government, industry, non-governmental organizations and academia to achieve specific goals. The partnership that began in 2005 includes the nation’s primary integrated demonstration of carbon capture at a coal-fired power plant, transportation through a dedicated 12 mile pipeline and storage in an oil field with the potential for enhanced oil recovery.

In addition to the NETL, SSEB has a long-standing relationship with the Oak Ridge National Laboratory (ORNL). Currently, SSEB is a contributing partner on the Consortium on Advanced Simulation of Light Water Reactors (CASL). Contributing partners are chosen based on their expertise in the field of nuclear energy and the ability to bring world-class technical insight to CASL’s industry challenge problems. SSEB is providing communications and outreach expertise for CASL to develop materials for specific stakeholders such as policy makers. The consortium connects fundamental research and technology development through an integrated partnership of government, academic, and industry that extends across the nuclear energy enterprise. Besides its collaborative efforts with NETL and ORNL, SSEB has developed a strong relationship with the Lawrence Livermore National Laboratory (LLNL) and its Laser Inertial Fusion Energy National Ignition Facility (LIFE/NIF) project. In support of its outreach and education activities, SSEB is working with LIFE/NIF to organize and sponsor an on-site tour of the facility for policy makers in the region. SSEB has served on the LIFE Industry Stakeholder Advisory Board.

SSEB maintains several special partnerships that advance energy resource development and regulatory issues. A long-standing partnership with the Eastern Coal Council (ECC) has produced opportunities for joint meetings and sponsorship of ECC’s annual meeting. In addition, collaboration with the Gasification Technologies Council has generated annual conclaves for state economic and environmental regulators to study the advantages of emerging gasification plants throughout the country.

Through the U.S. Department of Energy’s Office of Clean Energy Collaboration and the U.S. Energy Association, the Board became a founding stakeholder in the international Carbon Sequestration Leadership Forum (CSLF) in 2003. The policy and technical forums further international cooperation and understanding of carbon capture, utilization and storage, legal and regulatory issues, intellectual property, and myriad related issues. The CSLF recognized SSEB’s SECARB Partnership as an international program of excellence. On a national level, SSEB is an affiliate member of the National Association of State Energy Officials (NASEO). In this relationship, SSEB works closely with state energy office directors in the southern region to build support for state-level energy programs. SSEB works with the states on a wide array of programs, ranging from energy efficiency, low-income home energy assistance, weatherization, and energy security and infrastructure. In order to stay abreast of new developments in state energy offices and national initiatives, SSEB participates on various NASEO committees and task forces. SSEB actively works with public utility commissioners in the SSEB region, as well as nationally, through the National Association of Regulatory Utility Commissioners (NARUC). The board also cooperates with the utility commissioners in the Eastern Interconnection Planning Collaboration, working through a public stakeholder group to develop a robust process for studies of the electric transmission system in the East.

To foster regional cooperation and collaboration, the board continues a strong working relationship with other regional organizations such as the Southern Governors’ Association, the Southern Legislative Conference, the Consumer Energy Alliance-Southeast, and the Southeast Energy Efficiency Alliance. SSEB works to foster ongoing relationships with many other regional and state organizations with similar goals.

These are only a few examples of the collaborative relationships SSEB experiences through its diverse partnerships. Building partnerships is an essential goal of the board in order to leverage opportunities and expand its expertise to assist its member states. These collaborations allow SSEB to increase its program and financial commitments to the benefit of the entire southern region.

**EDUCATING STAKEHOLDERS**

The Southern States Energy Board takes seriously its mission of outreach and education through a variety of events, conferences, workshops, panel discussions, exhibits, and keynote presentations. Over the past year SSEB presented at and participated in a wide range of activities including community discussions of high performance buildings in Decatur, Georgia, to crucial energy conversations with the Council of State Governments and the Southern Legislative Conference. Samplings of engagements from the past year include:

- **Georgia Biomass Conference**
  2012 Energy Solutions for the Southeast
- **Power Experts Conferences**
  All of the Above Energy Policy, and CCUS as an Emissions Reduction Technology
- **Eastern Coal Council**
  Delivering the Coal Industry of the Future, and SECARB: Positioning the Coal Industry for the Future
- **Gasification Technologies Council**
  Gasification: Overview of IGCC in the U.S.
- **West Virginia Society of Mining Engineers**
  Policy, Technology and Regultation in Energy Production
- **Global CCS Institute Thought Leadership Workshop: Carbon Capture and Sequestration Forum**
  Policy Effects and Implications of New Leadership at DOE and EPA
- **Florida Electric Power Coordinating Group Environmental Committee**
  America’s Energy Future: Charting a Course
- **Virginia Governors Energy Policy Leadership Summit**
  Innovative State Approaches to Energy Policy leading to American Energy Independence
- **IEA Greenhouse Gas Combined Modeling and Risk Assessment Network**
  SECARB Phase Three
- **Puerto Rico Chamber of Commerce**
  Energy Efficiency Activity in the U.S. South
- **American Energy Independence**

The list of education and outreach activities that SSEB conducts throughout the year is extensive. In each case, SSEB strives to enhance and improve the understanding and awareness of domestic energy development, energy and environmental policies, and clean energy technologies.
The Southern States Energy Board’s (SSEB) core funding comes from annual appropriations from the 18 member states and territories. Each member’s share is computed by a formula written into the original compact. This formula is comprised of an equal share, per capita income, and population. The board has not requested an increase in annual appropriations in more than 25 years. The compact authorizes the board to accept funds from any state, federal agency, interstate agency, institution, person, firm, or corporation provided those funds are used for the board’s purposes and functions. This year, additional support was received for research projects from grants and cooperative agreements from the U.S. Department of Energy and through the American Recovery & Reinvestment Act of 2009 (ARRA).

Additionally, SSEB continues to lead an associate members program comprised of industry partners who provide an annual contribution to the board. Membership includes organizations from the non-governmental sector, corporations, trade associations, and public advocacy groups. The associate members program provides an opportunity for public officials and industry representatives to exchange ideas, define objectives, and advance energy and environmental planning to improve and enhance the South’s economic and environmental well-being.

In addition, the SSEB Carbon Management Program/Southeast Regional Carbon Sequestration Partnership’s (SECARB) industry associates provide an annual monetary contribution to support the SECARB Program. Allocation of these contributions is at the discretion of the Southern States Energy Board to support the carbon management initiatives and programs. Industry associates receive updates on current activities and progress made on SECARB projects, as well as participation in an annual stakeholder meeting held in Atlanta, Georgia. For a current list of industry associates, as well as all team members, please visit www.secarbon.org.

**Source S of Support

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**Notable Event

Oil Sands MOU Signing by Governors Phil Bryant, MS and Robert Bentley, AL

The Memorandum of Understanding (MOU) describes a coordinated effort between the Governors of the states of Alabama and Mississippi (States) and their designees to explore emerging energy resources in the States. The Governors recognize the need for a comprehensive geologic and engineering assessment of the States' oil sands resources and an analysis of the legal and regulatory frameworks applicable to resource development. The Governors understand the significance of the potential oil production from these resources and recognize the employment and economic development opportunities that development presents for the people of the States and the Southern States Energy Board region.

**Please visit the sseb website to view the entire document.**

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Publications

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