# **FORWARD**

✤ 2013 ElectriCities Annual Report

High Point University in High Point, N.C

HIGH POINT



#### Make no mistake, ElectriCities' focus is on the future.

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Indeed, our collective energy has been – and continues to be – grounded in supplying a steady stream of opportunities to the communities we serve. Not only for our generation but for generations to come. From investing in infrastructure to exploring renewable energy options to advancing economic development, the decisions we make today are fueled by the needs of our members 30, 40 and even 50 years down the line. Now, more than ever, taking the long view helps us to stay ahead of the curve. Together, we will power forward!

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High Point University students congregate between classes at the Slane Student Center.

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#### Message from the Chair and CEO





The audit reports of and financial information regarding North Carolina Eastern Municipal Power Agency, North Carolina Municipal Power Agency Number 1 and ElectriCities of North Carolina, Inc. are included in this report. Each agency is a separate and distinct legal entity, and the inclusion of such information regarding the entities should not be construed to indicate any relationship between them.

Look back at the past year and you will find one common theme: a focus on the future.

Whether it is searching for new ways to deliver value to the customers who depend on us or investing in infrastructure that will serve as the foundation for a successful future, we are constantly working toward a common goal: stronger public power communities that are well prepared to thrive in the years ahead.

As the energy behind public power, ElectriCities has a responsibility to help our members look forward. Collectively, we have more than 500,000 residential, commercial and industrial customers across North Carolina who are counting on us to provide safe and reliable power.

That means making sure we have the right infrastructure in place to handle future energy needs. The Greenville Generating Plant – an initiative that is expected to save \$2-3 million a year by reducing demand charges – is one example. (See page 10 to learn more about that project.) NCMPA1's ownership of the Catawba Nuclear Station, one of the best operating plants in the country, continues to provide the power needed for future growth.

You will also find us working behind the scenes to strengthen our communities. One example: partnering with economic development officials to recruit businesses and create new jobs in public power communities. In the past year, our members attracted 2,039 new jobs and \$317 million in new investment.

Developing state-of-the-art facilities like the Albemarle Prime Power Park (featured on page 8) will help us continue attracting new companies.

Another priority is controlling costs. That led us to renew conversations with Duke Energy last year about a potential sale of our generation assets. Selling our power generation assets in eastern North Carolina could accelerate cost savings for NCEMPA members. Moving forward, we will continue to focus on controlling costs for NCMPA1 members as well.

Our focus on the future takes many different forms: Training linemen on the latest technology and safety techniques. Monitoring issues in state and federal government that may impact the future of the power industry. Embracing new technology that makes it easier to manage energy use and identify power outages.

On page 22, you'll read about a pilot program in Benson that allows families to control their energy use from wherever they are. That's one way we are helping people reduce their energy bills, along with tried-and-true programs like our free home energy audits.

There's a real value in looking ahead. And it helps us deliver more value to you.

John T. Walser Suards

John T. Walser Jr. Chair

T. Graham Edwards Chief Executive Officer

#### **Board of Directors**



Mr. John T. Walser Jr. Chair, Lexington



Mr. Richard N. Hicks Vice Chair, Farmville



Mr. D. Ronald Hovis Secretary, Cherryville



Mr. Latimer B. Alexander IV High Point



Mr. John P. Craft

La Grange





Mr. Ronald D. Elks Greenville



Mr. Grant W. Goings Wilson



Mr. James S. Greene Jr. Concord



Mr. Wilson A. Lacy Fayetteville



Mr. Adam G. Mitchell Ayden



Mr. Donald D. Mitchell Monroe



Ms. Linda K. Story Granite Falls



Ms. Jennifer T. Stultz Gastonia



Mr. Robert A. Swinson IV Kinston



Mayor Vivian A. Jones Ex-Officio, Wake Forest



Mr. Jack F. Neel Ex-Officio, Albemarle

#### **Leadership Team**

T. Graham Edwards Chief Executive Officer

Roy L. Jones Chief Operating Officer F. Tim Tunis Chief Financial Officer

David M. Barnes Chief Legal & Ethics Officer

#### **Member Map**



NCMPA1 Participants
 NCEMPA Participants
 Wholesale Members
 Major North Carolina Cities

#### **Out-Of-State Associate Members**

VIRGINIA Bedford · Danville · Martinsville SOUTH CAROLINA Abbeville · Bamberg · Bennettsville · Camder Easley · Gaffney · Greer · Laurens · Newberry · Rock Hill · Union ·



# POWER FOR-WARD

#### > Power Forward

NC Public Power communities deliver safe, reliable power to customers every day. We're focused not only on providing power today but exploring options to increase reliability to business and industry for the future.

Albemarle Mayor Ronnie Michael with City Manager Ray Allen and Stanly County Economic Development Director Paul Stratos







Companies looking to boost their productivity are sure to be attracted to Albemarle. After all, the Albemarle Prime Power Park keeps electricity flowing reliably at no additional cost to its tenants. This near no-worries power supply makes the park a near no-brainer for any company involved in advanced manufacturing.

In short, the Albemarle Prime Power Park's on-site backup power generation provides a dependable supply of electricity for complex manufacturing processes. The benefit? Downtime decreases and the tenants can continue to charge forward.

Average restoration time in minutes

#### **0.61** Average number of annual

outages per customer

# 99.99

Percentage of time power is available for consumption

> Greenville Generating Plant provides peak-shaving energy when demand for electricity is greatest.

#### **NCMPA1** Leadership

**Jack F. Neel** Chair Albemarle **Mayor Barry C. Hayes** Vice Chair Granite Falls

Mayor Constantine H. Kutteh Secretary-Treasurer Statesville

**Board of Commissioners and Alternate Commissioners as of December 31, 2013** Alternate Commissioners' names appear in smaller type

Albemarle Mr. Raymond I. Allen Mr. Jack F. Neel Ms. Martha Sue Hall

**Bostic** Commissioner Vacant First Alternate Vacant

**Cherryville** Mayor Robert Austell Mr. Brian Dalton

**Cornelius** Mr. Thurman Ross Jr. Mr. David Gilroy

**Drexel** Ms. Sherri Bradshaw Mr. Carroll Franklin **Gastonia** Mr. Porter L. McAteer Mr. Jim Gallagher Mr. Paul Jakubczak

**Granite Falls** Mayor Barry C. Hayes Mr. Jerry T. Church Mr. Frank Mackie

**High Point** Mr. Strib Boynton Mayor Bernita Sims Mr. J. William McGuinn Jr.

Huntersville Mr. Gregory H. Ferguson Ms. Sarah McAulay

Landis Mr. W. Steve Rowland Mr. D. Reed Linn **Lexington** Mr. John T. Walser Jr. Mayor Newell Clark Mr. L. Wayne Alley

Lincolnton Mr. Stephen H. Peeler Mayor John O. Gilleland Jr. Mr. Jeff B. Emory

Maiden Mr. Billy R. Price Mr. Marcus C. Midgett

Monroe Mr. Donald D. Mitchell Mr. Freddie B. Gordon

Morganton Mr. Dan Brown Mr. Brooks Kirby Ms. Sally W. Sandy Newton Mr. Todd Clark Mr. Wayne Dellinger Mr. Douglas S. Wesson

**Pineville** Mr. George Fowler First Alternate Vacant

Shelby Mayor O. Stanhope Anthony III Mr. J. Richard Howell Jr. Mr. Brad R. Cornwell

Statesville Mayor Constantine H. Kutteh Mr. F. Kent Houpe Mr. Larry Pressley



#### **NCMPA1** Participants

City	Revenues (000s)	Customers	Ownership %
Albemarle	\$ 30,912	11,821	7.6043
Bostic	370	201	0.0869
Cherryville	5,386	2,425	1.5788
Cornelius	4,639	2,953	0.3621
Drexel	1,969	1,214	0.5070
Gastonia	67,674	26,268	17.1205
Granite Falls	5,376	2,391	0.9125
High Point	112,971	39,607	18.9600
Huntersville	12,038	4,501	0.6228
Landis	5,495	2,837	1.1298
Lexington	46,652	18,371	12.9345
Lincolnton	5,863	2,670	1.6078
Maiden	5,848	1,122	1.2891
Monroe	50,916	10,421	10.0377
Morganton	31,013	8,200	6.7352
Newton	13,612	4,486	2.1147
Pineville	11,001	2,756	0.5359
Shelby	18,102	7,936	5.9965
Statesville	42,235	12,962	9.8639

North Carolina Municipal Power Agency Number 1 was formed in 1976 and includes 19 Participants in the Piedmont and western part of North Carolina.

#### **NCMPA1 Operational Performance**

#### **NCMPA1 Energy and Demand\***

Years ending on December 31	2013	2012	All Time Peak
Energy (MW)	5,125,198	5,080,389	5,320,784 (2010)
Non-coincident Peak (MW)	1,022 (July)	1,047 (July)	1,140 (August 2007)
On-Peak Demand (MW)	970 (July)	1,029 (July)	1,110 (August 2007)
Average On-Peak Capacity Factor	71%	70%	

\* Billing Point Level including SEPA and Distributed Generation

#### **NCMPA1 Plant Information**

Unit	Capacity Factor% <sup>(1)</sup>	Availability Factor% <sup>(2)</sup>
Catawba Unit 1	102.1	100.0
Catawba Unit 2	91.7	90.7
McGuire Unit 1	88.8	88.4
McGuire Unit 2	102.3	100.0

Note: The above numbers are reported by Duke Energy to the Nuclear Regulatory Commission in the Unit's December 2013 Operating Data Report.

#### **Nuclear Refueling**

- » Catawba Unit 1 did not have a refueling outage in 2013.
- » Catawba Unit 2's last refueling outage began on September 14, 2013, and ended on October 17, 2013.
- » McGuire Unit 1's last refueling outage began on March 16, 2013, and ended on April 22, 2013.
- » McGuire Unit 2 did not have a refueling outage in 2013.

#### Nuclear Plant Operating Licenses Expiration

Duke Energy Carolinas requested License Extensions from the Nuclear Regulatory Commission for both the McGuire and Catawba Stations in June 2001. The NRC issued new operating licenses for the McGuire and Catawba Units on December 5, 2003. The operating licenses will expire as follows:

- » McGuire Unit 1 June 2041
- » McGuire Unit 2 March 2043
- » Catawba Unit 1 December 2043
- » Catawba Unit 2 December 2043

#### Security

The NRC has established a number of regulations regarding security and safeguard measures at nuclear facilities in the United States, including the Catawba Nuclear Plant ("Plant" or "Station"). These security orders (1) The ratio of the average operating output of a power generating unit to the capacity rating during a specified period of time. Capacity factors include both planned and unplanned outages.

(2) The time a power generating unit is capable of producing energy, regardless of its capacity level. Availability factors include both planned and unplanned outages.



have required the nuclear power plant licensees to implement additional measures addressing a wide range of security issues, such as: site access authorization, site security plans, nuclear facility security force personnel and the transport and control of radioactive material.

Since the September 11, 2001 terrorist attacks on the World Trade Center and Pentagon, there has been concern among the public, government agencies and media that nuclear stations could be the target of terrorist activity. Within a few hours of the September 11 events, the seven nuclear stations operated by DEC went to a heightened security status and have remained there. The nuclear stations continuously review and evaluate security procedures and have implemented further enhancements based on these evaluations, input from the NRC and recommendations of security experts.

Nuclear power plants are among the most hardened and secure facilities in the world today. They were designed and constructed to withstand tremendous physical forces such as earthquakes and tornados. They have redundant safety systems and multiple barriers designed to protect the public in even highly unlikely emergency scenarios. Nuclear reactor buildings are extremely robust structures, many times stronger than typical office buildings and skyscrapers. Nuclear plants also have numerous, redundant, safety systems and physical barriers to prevent the release of radioactive materials and to protect the public. Nuclear stations have numerous security features, both visible and unseen. These include armed, well-trained security forces; physical intrusion detection systems and robust barriers consisting of concrete structures and razor wire fences; extensive vehicle barrier systems; and advanced surveillance, detection and

assessment equipment that monitors areas surrounding the Station.

Station access is tightly controlled by skilled security officers and multiple, sophisticated electronic devices. Nuclear employees must pass stringent background investigations, psychological evaluations and drug and alcohol screenings. Employees and contractors are also subject to continual monitoring and screening. Beyond all these protections, there are detailed plans for handling emergencies from all causes. These are closely coordinated and practiced with county, state and federal officials. Nuclear station neighbors receive emergency planning information annually.

Under contractual arrangements with NCMPA1, all security issues are handled by DEC. As the operator of a nuclear plant, DEC has the responsibility to ensure the plant is operated safely and DEC's nuclear plants have safety records among the best in the nation.

#### **Power Supply Overview**

#### **Supplemental Agreements**

NCMPA1 purchases power through supplemental agreements with other utilities and merchant generators for its energy and capacity requirements above its Catawba Project Entitlements. In 2013, these additional energy and capacity requirements came from the following suppliers:

- » NCMPA1 purchased 150 MW of capacity from Southern Power Company and sourced out of Rowan County, N.C.
- » NCMPA1 purchased 185 MW of capacity from Southern Power Company and sourced out of Cleveland County, N.C.
- » NCMPA1 has a 50 MW Instantaneous

Energy Services agreement with Duke Energy that is reviewed yearly.

#### **Distributed Generation**

NCMPA1 owns 34 diesel generators located on city electric systems. These units, totaling 65 MW, are operated remotely on short notice during periods of high demand and high market prices. Also under remote control operation are city-owned and customer-owned generators totaling 90 MW. This combination of 155 MW of remotely operated, fast-start units provides great operational flexibility for NCMPA1's power supply program.

NCMPA1 has been successful in placing under contract an additional 17 MW of generation owned by cities and retail customers for local operation under NCMPA1's power supply program. These operations are coordinated through NCMPA1's operations center, maintaining availability during times of peak demand and high market prices.

NCMPA1 will continue to evaluate additional distributed generation opportunities to improve power supply flexibility and reliability.

#### **Monroe Generating Station**

NCMPA1 owns two gas turbine generators in Monroe that provide 24 MW of peaking and reserve capacity. These two generators that were installed in 2009 can operate on either natural gas or fuel oil. Natural gas is obtained from the City of Monroe's gas system and the station is connected to the City's electric system. Just as our diesel Distributed Generation, these gas turbine generators can be started on short notice during periods of high demand and high market prices.

#### Load Management

NCMPA1's load management operations provide signals to customers that allow them to reduce load during peak billing times. The operation of various demand side management programs results in a total peak reduction of approximately 58 MW each month. The load management strategy this year continued to focus on forecasting accuracy in an effort to reduce the number of load management operation hours. NCMPA1 operated load management an average of five hours per month during 2013.

#### Power Supply Management (Surplus Sales)

NCMPA1 performs its own power supply resource scheduling and power marketing in order to provide the cities with reliable power at the lowest cost. All day-ahead, short-, mid- and long-term transactions and resource optimization are managed internally, while intra-day activities are managed through an agency agreement with The Energy Authority.

NCMPA1 optimizes its supply portfolio by:

- » Economically scheduling and dispatching power supply resources to meet the needs of the Participants, including the nuclear plants, supplemental resources, distributed generation and transmission agreements.
- Balancing resources and obligations every four seconds with its Instantaneous Energy Services agreement.
- » Selling surplus energy in the wholesale power markets at the highest price.
- Buying energy in the wholesale power markets when cheaper than its supplemental resources.
- » Managing the associated risks including

NCMPA1

market price volatility, unit and transmission outages and counterparty credit.

In addition to scheduling and dispatching resources to meet the energy requirements of the Participants, NCMPA1 executed over 3,100 transactions related to surplus sales activities in 2013. These transactions resulted in revenues in excess of \$54 million and in benefits exceeding \$36 million.

NCMPA1 has a Risk Management Committee consisting of executive staff that provides oversight and direction to the power supply program. The ElectriCities Board of Directors adopted the NCMPA1 Risk Management Policy and the Risk Management Committee developed internal Risk Management Guidelines to control all transactions related to power supply activities.

#### **Transmission Agreements**

NCMPA1 purchases transmission for its native load requirements from DEC Transmission in accordance with DEC's Open Access Transmission Tariff. In addition, NCMPA1 purchases transmission from DEC and other regional transmission providers for the delivery of surplus energy to the wholesale market. All the required agreements have been filed and approved by the Federal Energy Regulatory Commission.

#### Wholesale Rates

The NCMPA1 Wholesale Rate Plan is reviewed at least annually by the NCMPA1 Rate Committee and approved by the Boards. The Rate Committee met in March 2013 and recommended a five percent basic wholesale rate increase effective July 1, 2013, that was approved by the Boards.

# Retail Rate Assistance and Billing Services

In 2013, NCMPA1 staff completed 16 retail rate studies. Rate studies use 12 months of a Participant's billing data and calculate at customer detail level projected revenue using updated load forecast and projected retail rates. Innovative rate assistance for new retail customers was also provided in 24 instances. Rate assistance was also provided for existing customers interested in exploring other rate options. As needed, rate assistance was also provided regarding tracking revenue and expenses throughout the year.

NCMPA1 continues to provide retail billing services to the cities through its Customer Database and Billing System. This system allows the cities to offer innovative retail rates that could not be accommodated by their internal billing systems. City staff members and customers utilize customer usage data, stored in the database and accessible through a secure extranet site, in making cost-saving operational recommendations/decisions. Thirteen Participants utilize this monthly assistance for approximately 286 accounts.

#### **Federal Regulations**

#### **Climate Change Issues**

Capital expenditure risks to electric utilities from Congress enacting legislation to reduce emissions of greenhouse gases has subsided, but this does not mean electric utilities are not subject to regulation that could require additional capital outlays. In place of Congressional action, electric utilities are increasingly subject to more stringent regulatory environmental compliance requirements emanating from the Evironmental Protection Agency. The EPA is expected to finalize rules in late 2014 or early 2015 to govern the regulation of greenhouse gas emissions from new electric utility fossil-fueled power plants. The current proposal contemplates mandating carbon capture and sequestration from all new coal plants effectively eliminating coal as a new generation resource until the cost of capture technology is substantially reduced. In the most recent proposal, EPA has chosen to defer setting standards for facilities subject to significant modification. EPA has not indicated when they will propose standards for modified plants but these new rules may contemplate stringent emissions standards and, depending on how they are finalized, could impact the retrofitting of existing fossil-fueled power plants.

#### Reciprocating Internal Combustion Engines

The EPA rules establishing national emissions standards for hazardous air pollutants for existing compression ignition reciprocating internal combustion engines will go into effect May 3, 2014. These rules affect some of NCMPA1-owned distributed generation, as well as Participant-owned distributed generation. NCMPA1 retrofits its affected units with emissions control equipment to meet the new standards.

#### North American Electric Reliability Corporation Compliance

The Energy Policy Act of 2005 directed the FERC to develop mandatory electric reliability standards and a process for enforcing those standards. Subsequently, FERC Order 672 certified NERC as the Electric Reliability Organization responsible for the development and enforcement of the standards. SERC Reliability Corporation and ReliabilityFirst Corporation are NERC regional entities that oversee compliance with the standards in the southeastern and mid-Atlantic regions of the United States. Order 672 also directed all owners, operators and users of the bulk power system to register with the ERO and be subject to the reliability standards. As a result, on June 18, 2007, NERC Reliability Standards became mandatory for the municipal electric systems of some cities that are Participants of NCMPA1.

NCMPA1, its Participants and other entities that are subject to the reliability standards delegated their compliance responsibilities to ElectriCities. ElectriCities is registered with NERC as a Joint Registration Organization on behalf of NCMPA1's Participants and other members of the JRO that would otherwise be required to register with NERC individually, based on NERC's criteria for registration, in some or all of the following functional categories: Load-Serving Entity, Resource Planner, Purchasing-Selling Entity and Distribution Provider. ElectriCities staff manages an Internal Reliability Compliance Program to ensure that the members of the JRO remain in compliance with all applicable NERC, SERC and RFC reliability standards and any additional requirements. As members of the JRO, the applicable NCMPA1 Participants have agreed to cooperate fully with ElectriCities in the implementation of the IRCP and to perform any associated tasks to ensure continued compliance with the reliability standards.

#### **Cyber Security**

Cyber security threats to the electric sector are garnering increased attention as foreign operatives and others seek ways to disrupt the economy and the nation. NCMPA1, both directly and through its contracted plant operators, participates in and remains in compliance with cyber security standards developed by the NERC.

On February 13, 2013, President Obama signed an Executive Order designed to increase the US Government's level of preparation for cyber threats and to facilitate industry coordination among the critical infrastructure sectors. The electric sector is the only sector that currently has mandatory and enforceable federal cyber security standards already in place. Nonetheless, the administrative actions to direct additional information sharing between the US Government and the electric sector are considered beneficial and should serve to enhance current actions.

#### North Carolina State Regulations

#### **Renewable Energy Portfolio Standard**

Under North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard, NCMPA1 member cities must obtain up to 10 percent of their energy through renewable energy or energy efficiency resources by 2018. NCMPA1 is committed to meeting the REPS requirements in a least-cost manner, while maximizing the benefits to its member cities. Compliance with REPS can be accomplished through any combination of the following:

- » Generate bundled renewable energy using renewable facilities
- » Buy bundled renewable energy from renewable facilities
- » Buy Renewable Energy Certificates
- » Reduce energy consumption via demandside management or energy efficiency

- » Buy all or part of energy requirements through a wholesale contract with a supplier that complies with REPS
- » Meet the cost cap by incurring incremental costs for some or all of the above

In 2012 the general REPS requirement began, and is escalated as follows:

- » 2012 3 percent of prior year retail sales
- » 2015 6 percent of prior year retail sales
- » 2018 and beyond 10 percent of prior year retail sales

Along with energy derived from unspecified renewable resources (General Requirement), the 2013 requirements included three "carveout" requirements: energy derived from solar facilities, biomass energy derived from swine waste, and biomass energy derived from poultry waste. NCMPA1 met its solar requirement and the General Requirement in 2013. However, the North Carolina Utilities Commission delayed the 2013 swine and poultry requirements until 2014 for all North Carolina utilities, including NCMPA1. The swine and poultry requirements were delayed because there were not enough swine and poultry biomass generators online in North Carolina to meet these statewide requirements in 2013.

To meet its future REPS requirements, NCMPA1 has entered into several REC purchase agreements, including the purchase of:

- » The output of a 1 MW solar photovoltaic generation plant in Shelby, N.C.
- » In-state and out-of-state solar photovoltaic RECs

- » In-state wood waste biomass RECs
- » In-state and out-of-state poultry waste biomass RECs
- » In-state and out-of-state swine waste biomass RECs
- » Out-of-state wind RECs

Through these REC purchases, NCMPA1 has secured its supply of RECs to meet the REPS requirements for the General Requirement, solar requirement, and the poultry requirement through 2016. NCMPA1 along with the other North Carolina electric utilities, continues to solicit proposals from potential swine waste biomass electric generating facilities to meet the swine waste requirements.

In addition to the activities listed above, NCMPA1 has been actively developing and

implementing energy efficiency programs as another key component of the renewable portfolio. During 2013, NCMPA1 continued to promote these energy efficiency programs. These energy efficiency programs include:

- » Commercial Lighting Rebate Program
- » High Efficiency Heat Pump Rebate Program
- » Commercial/Industrial RFP (request for proposals) for Energy Efficiency Projects
- » Commercial Solar Thermal Rebate Program
- » Municipal Energy Efficiency Projects

NCMPA1 has been active at the NCUC, helping to shape the REPS program through filings and participation in working groups.

### NCMPA1 Investment and Outstanding Debt Overview

Investment Portfolio Statistics			
Earnings		Income	e Rate of Return
2013	\$	16,544,000	2.06%
2012	\$	17,334,000	) 2.49%
Market Va	lue	as of 12/31	Average
		Value	e Maturity(yrs.)
2013	\$	911,838,000	) 2.6
2012	\$	954,100,000	) 2.9
Debt Outs	stan	ding as of 1	2/31 Weighted Avg
Fixed Rate	Bon	ds Balance	e Interest Cost
2013	\$ 1	,433,090,000	) 3.4%
2012	\$ 1	1,516,515,000	) 3.4%
Bond Rec	onc	iliation	
Bonds Outs	stanc	ling 12/31/12	\$1,516,515,000
Matured 1/	2/13		\$ 83,425,000
Bonds Outs	stand	ding 12/31/13	\$1,433,090,000

Bonds	Outstanding	as o	of 12/	/31/13
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Series	Par Amount
Series 1998 A	\$ 29,550,000
Series 2008 A	321,275,000
Series 2008 C	48,740,000
Series 2009 A	198,995,000
Series 2009 B	9,200,000
Series 2009 C	8,000,000
Series 2009 D	68,650,000
Series 2010 A	74,765,000
Series 2010 B	68,885,000
Series 2012 A	462,550,000
Series 2012 B	101,295,000
Series 2012 C	41,185,000
Total	\$ 1,433,090,000



# FOR-BAARD

Benson Smart Grid pilot participant Haley Zapp monitors home energy use while at the PK Vyas Park in Benson.

#### > Forward Thinking

The Town of Benson launched a Smart Grid pilot program in 2013, adding another layer to smart energy use. Today's Smart Grid applications allow participants to monitor home energy and water use remotely from mobile devices. Benson homeowners can simply check their mobile phone or iPad to see if an appliance was left on. Adjusting the thermostat and water heater is just as easy.





Focusing on energy education helps customers learn how to control their energy costs. Through innovative school programs like E-tracker, students use scientific methods to learn how weather affects home energy costs. The program was introduced in 2013 to students in Clayton, Rocky Mount, Lexington and Shelby. Additional programs are in development in schools across North Carolina.

Our ongoing free home energy audit program has provided face-to-face energy education sessions to hundreds of people over the last eight years. With a little education, these public power customers can take steps to lower their consumption and energy bills.



kits distributed

**Residential energy** 

audits conducted

Since 1977, GUC's Energy Services Office has been a source of helpful reliable energy information. Customers call and visit the office daily for assistance with a variety of energy-related matters and experienced Energy Services Specialists are available at no charge to help.

#### **NCEMPA Leadership**

**Vivian A. Jones** Chair Wake Forest Matthew R. Zapp Vice Chair Benson **Donald I. Evans** Secretary-Treasurer Wilson

Board of Commissioners and Alternate Commissioners as of December 31, 2013

Alternate Commissioners' names appear in smaller type

Apex Mr. Bruce A. Radford Mr. J. Michael Wilson Mr. R. Lee Smiley

Ayden Mayor Stephen W. Tripp Mr. Christopher Tucker

Belhaven Mayor Adam W. O'Neal Dr. Guinn Leverett

Benson Mr. Matthew R. Zapp Mr. Braston A. Newton

**Clayton** Mr. Robert J. Ahlert Mayor Jody L. McLeod

**Edenton** Ms. Anne-Marie Knighton Mr. Glenn Andersen

**Elizabeth City** Mr. Richard Olson Mayor Joseph W. Peel

**Farmville** Mr. Richard N. Hicks Mr. David P. Hodgkins Mr. Brian Shackelford Fremont Mr. Leon V. Mooring Ms. Barbara Aycock Mr. Harold Cuddington

**Greenville** Dr. Virginia D. Hardy Mr. John Franklin Minges III Mr. Anthony C. Cannon

Hamilton Mr. Herbert L. Everett Mayor Donald G. Matthews III

Hertford Mr. Brandon Shoaf Mayor Horace C. Reid Jr.

Hobgood Commissioner Vacant Mr. Danny Ellis

Hookerton Mayor Robert E. Taylor Ms. April H. Baker Mr. Danny Taylor

Kinston Commissioner Vacant Mr. Tony Sears Ms. Rhonda F. Barwick

La Grange Mr. John P. Craft Mr. Larry Gladney Mr. Bobby Wooten **Laurinburg** Mr. Charles D. Nichols III Mr. Curtis B. Leak

Louisburg Mr. Ray Patterson Mr. Tony L. King Mr. Mark R. Warren

Lumberton Mr. Harry L. Ivey Mr. Leon Maynor Mr. T. Wayne Horne

**New Bern** Mr. Jonathan Rynne First Alternate Vacant

**Pikeville** Commissioner Vacant Mr. Robert Hooks

**Red Springs** Mayor John M. McNeill Mr. David Shook Mr. Edward Henderson

Robersonville Ms. Elizabeth W. Jenkins Mr. Stacy Scott Mr. John David Jenkins

Rocky Mount Mr. Andre D. Knight Mr. Charles W. Penny Mr. Richard H. Worsinger Scotland Neck Mayor Leonard Bunting Ms. Nancy Jackson

Selma Commissioner Vacant Mr. Donald Baker Mayor Cheryl L. Oliver

Smithfield Mr. Paul Sabiston Mr. Peter T. Connet

**Southport** Mr. Paul D. Fisher Mr. James F. Powell III

**Tarboro** Mayor Rick C. Page Mr. M. Alan Thornton Mr. Robert L. Harrison

Wake Forest Mayor Vivian A. Jones Mr. Mark S. Williams

Washington Mr. Doug Mercer Mr. Keith Hardt Mr. Brian Alligood

Wilson Mr. Donald I. Evans Mr. Dathan C. Shows Mr. Grant W. Goings



#### **NCEMPA Participants**

City	Revenues (000s)	Customers	Ownership %
Арех	\$ 25,483	14,831	0.7056
Ayden	11,935	4,548	1.1340
Belhaven	2,754	1,121	0.4090
Benson	4,364	1,766	0.5773
Clayton	11,612	5,250	0.7448
Edenton	12,023	4,157	1.5961
Elizabeth City	35,728	11,969	4.2510
Farmville	6,461	2,879	1.2901
Fremont	1,686	806	0.3062
Greenville	185,919	64,629	16.1343
Hamilton	403	249	0.0783
Hertford	2,871	1,203	0.4124
Hobgood	516	285	0.0913
Hookerton	737	390	0.1550
Kinston	51,391	11,809	8.6678
La Grange	3,475	1,500	0.5014
Laurinburg	16,029	5,672	2.2675
Louisburg	7,641	1,930	0.8577
Lumberton	30,188	12,323	5.1568
New Bern	58,598	21,284	6.3676
Pikeville	1,168	516	0.2046

North Carolina Eastern Municipal Power Agency was formed in 1976 and includes 32 Participants in eastern North Carolina.

City	Revenues (000s)	Customers	Ownership %
Red Springs	\$ 4,434	1,700	0.5798
Robersonville	2,679	1,068	0.5066
Rocky Mount	88,155	27,167	16.0260
Scotland Neck	3,204	1,501	0.5762
Selma	8,079	2,666	0.8102
Smithfield	19,042	4,491	2.0056
Southport	6,474	2,620	0.7139
Tarboro	26,945	6,060	4.7427
Wake Forest	16,737	6,187	0.7262
Washington	35,081	13,478	5.8920
Wilson	137,999	33,619	15.5120

Source: 2012 EIA-861 Data

#### **2013 Operational Performance**

#### **NCEMPA Energy and Demand\***

Years ending on December 31	2013	2012	All Time Peak
Energy (MWh)	7,323,648	7,241,668	7,735,512 (2010)
Non-coincident Peak (MW)	1,412 (July)	1,514 (July)	1,632 (August 2007)
On-Peak Demand (MWh)	1,304 (July)	1,378 (July)	1,445 (August 2007)
Average On-Peak Capacity Factor	78%	77%	

\* Billing Point Level including SEPA and Distributed Generation

(1) The ratio of the average operating output of a power generating unit to the capacity rating during a specified period of time. Capacity factors include both planned and unplanned outages.

(2) The time a power generating unit is capable of producing energy, regardless of its capacity level. Availability factors include both planned and unplanned outages.

(3) The ratio of net maximum generation that could be provided after all types of outages and deratings are taken into account. It measures the percent of maximum generation over time.

#### **NCEMPA Nuclear Plant Status**

Unit	Capacity Factor% <sup>(1)</sup>	Availability Factor% <sup>(2)</sup>
Brunswick Unit 1	98.26	100.00
Brunswick Unit 2	78.16	93.15
Shearon Harris	84.74	84.29

#### **NCEMPA Fossil Plant Status**

Unit	Capacity Factor% <sup>(1)</sup>	Equivalent Availability% <sup>(3)</sup>
Mayo Unit 1	40.82	78.40
Roxboro Unit 4	44.28	83.40

#### **Nuclear Refueling**

- » Brunswick Unit 1 did not have a refueling outage in 2013
- Brunswick Unit 2's last refueling outage began on March 3, 2013, and ended on May 9, 2013
- » Harris Unit 1's last refueling outage began on November 9, 2013, and ended on December 11, 2013

#### **Plant Information**

The Roxboro Power Plant, consisting of four units, began operation in 1966 and ranks as one of the largest power plants in the United States. Mayo, a single unit power plant, is located near Roxboro and began commercial operation in 1983. As part of the fleet modernization plan, Duke Energy Progress and NCEMPA have invested more than a billion dollars in technology to reduce emissions dramatically at both plants in Person County and will continue to operate these coal-fired facilities for the foreseeable future.

Roxboro Unit 4 and Mayo Unit 1, our jointly owned coal-fired power plants, concluded 2013 with commendable performance statistics. Both facilities continue to benefit from the implementation of emissions technologies from 2007 through 2013. Roxboro Unit 4 achieved a Capacity Factor of 44.28 percent and Net Generation of over 2.7 million MWh during 2013. As a result of NCEMPA and DEP concluding an Operating and Fuel Agreement Amendment combining coal piles, total annual savings for Roxboro Unit 4 and the Mayo plant is estimated to be in excess of \$1.5 million by using opportunity coal purchases and new fuel-blending capability. The Mayo Plant ended 2013 with a Net Generation of over 2.6 million MWh and a Capacity Factor of 40.82 percent. DEP is addressing recent industry events

associated with the release of coal ash by converting from wet to dry ash systems, thereby eliminating the flow to the ash ponds at the Roxboro and Mayo facilities.

The Brunswick Nuclear Plant, located just north of Southport, N.C., houses two boiling water reactors. It was the first nuclear power plant built in North Carolina, beginning operation in 1975, with an additional unit beginning operation in 1977. In 2013, the Brunswick Units had combined generation of over 14.4 million MWh. Brunswick Unit 1 concluded the year 2013 with a Capacity Factor of 98.26 percent. Brunswick Unit 1 performance during 2011 was recognized as one of the top boiling water reactors (BWR) in the world by General Electric Energy for superior performance in operating efficiency and long continuous runs during a fuel cycle. Brunswick Unit 2 completed a power up-rate from 920 to 932 MW during January of 2012; concluded a refueling outage during 2013 with a Capacity Factor of 78.16 percent.

The Shearon Harris Nuclear Plant began commercial operation in 1987 and completed a 28 MW power up-rate during 2013. The process of implementing this multi-phased power uprate project consisted of a thermal power up-rate and various efficiency improvements to be fully completed by 2015. NCEMPA benefited from this power up-rate and received an additional 4.6 MW retroactive to January 2012. During 2013, the Shearon Harris Plant attained a Capacity Factor of 84.74 percent and achieved a net generation output of 6.9 million MWh.

#### Nuclear Plant Operating Licenses Expiration

» Brunswick Unit 1 • 2036

- » Brunswick Unit 2 2034
- » Shearon Harris Unit 1 2046

#### Security

The Nuclear Regulatory Commission has established a number of regulations regarding security and safeguard measures at nuclear facilities in the United States, including the Brunswick and Shearon Harris Nuclear Plants. These security orders have required the nuclear power plant licensees to implement additional measures addressing a wide range of security issues, such as: site access authorization, site security plans, nuclear facility security force personnel and the transport and control of radioactive material.

Since the September 11, 2001 terrorist attacks on the World Trade Center and Pentagon, there has been concern among the public, government agencies and media that nuclear stations could be the target of terrorist activity. Within a few hours of the September 11 events, the seven nuclear stations operated by DEC went to a heightened security status and have remained there. The nuclear stations continuously review and evaluate security procedures and have implemented further enhancements based on these evaluations, input from the NRC and recommendations of security experts.

Nuclear power plants are among the most hardened and secure facilities in the world today. They were designed and constructed to withstand tremendous physical forces such as earthquakes and tornados. They have redundant safety systems and multiple barriers designed to protect the public in even highly unlikely emergency scenarios. Nuclear reactor buildings are extremely robust structures, many times stronger than typical office buildings and skyscrapers. Nuclear plants also have



numerous, redundant, safety systems and physical barriers to prevent the release of radioactive materials and to protect the public. Nuclear stations have numerous security features, both visible and unseen. These include armed, well-trained security forces; physical intrusion detection systems and robust barriers consisting of concrete structures and razor wire fences; extensive vehicle barrier systems; and advanced surveillance, detection and assessment equipment that monitors areas surrounding the Station.

Station access is tightly controlled by skilled security officers and multiple, sophisticated electronic devices. Nuclear employees must pass stringent background investigations, psychological evaluations and drug and alcohol screenings. Employees and contractors are also subject to continual monitoring and screening. Beyond all these protections, there are detailed plans for handling emergencies from all causes. These are closely coordinated and practiced with county, state and federal officials. Nuclear station neighbors receive emergency planning information annually.

Under contractual arrangements with NCMPA1, all security issues are handled by DEC. As the operator of a nuclear plant, DEC has the responsibility to ensure the plant is operated safely and DEC's nuclear plants have safety records among the best in the nation.

#### **Power Supply Overview**

NCEMPA supplies the All-Requirements Power Supply for its Participants through Initial Project and Supplemental Resources and secures transmission service for the Participants on the DEP and Dominion transmission systems.

#### **Initial Project**

The initial project includes undivided ownership interests acquired from DEP of:

- » 18.33 percent in each of the nuclear-fueled Brunswick Units 1 and 2
- » 12.94 percent in the coal-fired Roxboro Unit 4
- » 16.17 percent in the coal-fired Mayo Unit 1
- » 16.17 percent in the nuclear-fueled Shearon Harris Unit 1

Total ownership in both coal and nuclear resources accounted for 700.7 MW of capacity at the end of 2013. This ownership met approximately 70.0 percent of the energy requirements and 50 percent of the capacity requirements for NCEMPA in 2013.

#### **Supplemental Agreements**

NCEMPA purchases supplemental capacity and energy from DEP, with the current agreements extending through 2017. In October 2011, NCEMPA signed a new supplemental load agreement with DEP, extending supplemental purchases through December 31, 2031.

Under the new agreement, NCEMPA purchases supplemental power necessary to meet the energy needs of the 32 member cities beyond that supplied by the generation facilities currently owned by NCEMPA.

These Supplemental Load Agreements provide for load following and unlimited capacity at native load priority for approximately 30 percent of the energy needs and 50 percent of the capacity needs. The Supplemental Load Agreements include: coincident peak pricing and formula-based rates for capacity, energy, administration and general costs and fixed accounting and billing costs. Coincident Peak pricing allows NCEMPA Participants and their customers to benefit from over 350 MW of demand-side control. In addition, NCEMPA is installing 20 MW of distributed generation.

The combination of plant ownership, supplemental load agreements and transmission service provides NCEMPA a long-term power supply with the highest available reliability and delivery assurance and a stable cost structure to support and enhance the Participants' rate, energy-efficiency and demand-side management programs.

#### Load Management

NCEMPA staff and Participants again successfully controlled loads during each month's peak billing period in 2013. This success translated into estimated power cost savings of over \$44 million throughout 2013.

NCEMPA recommended load management an average of six hours per month, during approximately three days each month. NCEMPA Participants and their customers shed a monthly average of over 291 MW, with 320 MW shed during the maximum peak hour. Load Side Generation is an integral part of this load shedding process with over 184 MW of load side generation noticed as of December 31, 2013.

NCEMPA and Participant staff continued to develop improved systems and communication alternatives for load management operations. NCEMPA owns and maintains equipment at two radio stations in North Carolina to control load management equipment across eastern North Carolina. The load management e-mail/pager system is used to advise Participants of load management recommendations, peaks and other information. The 32 NCEMPA cities use over 300 pagers, e-mails, cell phones and two-way paging devices. NCEMPA is also reviewing the feasibility of using two-way communication switches and smart grid technology for residential load management operations. New substation construction, expansions and delivery facility planning were in process or completed for Elizabeth City, New Bern, Rocky Mount and Greenville Utilities Commission.

#### **Transmission Agreements**

NCEMPA obtains transmission service for the Initial Project output and supplemental capacity and energy under transmission and delivery contracts with DEP and Dominion. The Participants are assured of facilities and delivery under these network service agreements.

#### Wholesale Rates

NCEMPA did not have a wholesale rate increase in 2013. The current rate plan projects an approximate 3 percent rate increase starting in 2015, however, ongoing changes in projected expenses and plant operations may change the outlook.

NCEMPA completed installation of the first 14 MW of a total of 20 MW of distributed generation (NCEMPA DG Project) during 2013 providing savings in supplemental capacity, supplemental energy and transmission costs. The NCEMPA Board of Commissioners and the ElectriCities Board of Directors approved the All-Requirements Rider Number 12 which allocates the savings produced by the NCEMPA DG Project to the Participants on their monthly power billing statements.



# Retail Rate Assistance and Billing Services

The NCEMPA Retail Billing Program serves 24 Participants in gathering interval meter data for 323 commercial and industrial customers. NCEMPA continues to utilize and maintain Itron's MV-90xi software, ensuring the ongoing quality and level of support provided through the Retail Billing Program.

NCEMPA staff remotely reads each meter, processes meter data and provides power billing information to the Participants. Custom reports and graphs are provided electronically within days of month-end. Retail customers are provided an array of detailed data, helping to develop and maximize their energy savings and load management programs.

Comprehensive Participant retail rate support is provided to Participants throughout the year, including competitive rate model analyses, innovative rate recommendations, assistance with complex billing error analysis and resolution, proposals for generation and demand side management recommendations, and review of power supply costs. Technical education is also delivered for improving customer service among municipal support staff, and assistance is provided with preparation of public power cost proposals for load growth opportunities.

#### **Federal Regulations**

#### **Climate Change Issues**

Capital expenditure risks to electric utilities from Congress enacting legislation to reduce emissions of greenhouse gases has subsided, but this does not mean electric utilities are not subject to regulation that could require additional capital outlays. In place of Congressional action, electric utilities are increasingly subject to more stringent regulatory environmental compliance requirements emanating from the United States Environmental Protection Agency (EPA). The EPA is expected to finalize rules in late 2014 or early 2015 to govern the regulation of greenhouse gas (GHG) emissions from new electric utility fossil-fueled power plants. The current proposal contemplates mandating carbon capture and sequestration from all new coal plants effectively eliminating coal as a new generation resource until the cost of capture technology is substantially reduced. In the most recent proposal, EPA has chosen to defer setting standards for facilities subject to significant modification. EPA has not indicated when they will propose standards for modified plants but these new rules may contemplate stringent emissions standards and, depending on how they are finalized, could impact the retrofitting of existing fossil-fueled power plants.

Additionally, the President has directed the EPA to propose guidelines or standards by June 1, 2014 governing the carbon dioxide emissions from existing fossil-fueled power plants, with a final rule to be issued by June 1, 2015. These new requirements may increase costs on electric generation portfolios that rely on fossil fuels, including operations at Roxboro Unit 4 and Mayo Unit 1. Power Agency staff cannot predict what effects these factors may have on the business operations and financial condition of the Power Agency or the Participants at this time.

#### **Clean Air**

The EPA has also issued the Clean Air Interstate Rule, Clean Air Mercury Rule and Clean Air Visibility Rule which may require compliance measures. In July 2011, the EPA issued the Cross-State Air Pollution Rule to reduce Nitrous Oxide and Sulfur Dioxide emission in 27 Eastern states. In August 2012, the District of Columbia Circuit Court of Appeals vacated CSAPR and ordered the EPA to continue with implementation of CAIR. In June 2013, the United States Supreme Court granted a petition to review the District of Columbia Circuit Court of Appeals decision on CSAPR. The outcome of this cannot be determined at this time NCEMPA's fossil units at Roxboro and Mayo currently have NOx and SO2 controls, making NCEMPA one of the few utilities in the nation with 100 percent clean air compliant units. The jointly owned units fleet modernization efforts and retirement plans appear to have positioned NCEMPA and DEP relatively well to meet the CSAPR rule, should it ultimately be implemented.

DEP is also addressing recent industry events related to the release of coal ash. with a fly ash landfill transition project, converting from wet to dry ash systems and eliminating the flow to the ash ponds at the Roxboro and Mayo Plants. Additionally, the flue gas desulfurization wastewater treatment process will be modified to add a Zero Liquid Discharge system to the settling ponds. The ZLD equipment will distill the wastewater into water for re-use in the plant. The ZLD at the Mayo Plant is scheduled to be completed during 2014. In 2010, EPA announced proposed regulations for regulating coal combustion residuals under the Federal Resource Conservation and Recovery Act. In January 2014, the EPA announced that it would issue final rules by December 2014. The financial and operational impacts to NCEMPA cannot be determined at this time.

With regard to spent nuclear fuel, NCEMPA has responsibility for backend costs or liabilities associated with its ownership interest in nuclear fuel burned at the Brunswick Plant after April 7, 1983, and at the Shearon Harris Plant. NCEMPA has provided an allowance for the estimated costs of the final disposal of such spent nuclear fuel.

#### Reciprocating Internal Combustion Engines

The EPA rules establishing national emissions standards for hazardous air pollutants for existing compression ignition reciprocating internal combustion engines will go into effect May 3, 2014. These rules affect up to 106 MW Participant and end use customer owned distributed generation.

#### North American Electric Reliability Corporation Compliance

The Energy Policy Act of 2005 directed the Federal Energy Regulatory Commission to develop mandatory electric reliability standards and a process for enforcing those standards. Subsequently, FERC Order 672 certified the NERC as the Electric Reliability Organization responsible for the development and enforcement of the standards. SERC Reliability Corporation and ReliabilityFirst Corporation are NERC regional entities that oversee compliance with the standards in the southeastern and mid-Atlantic regions of the United States. Order 672 also directed all owners, operators and users of the bulk power system to register with the ERO and be subject to the reliability standards. As a result, on June 18, 2007, NERC Reliability Standards became mandatory for the municipal electric systems of some cities that are Participants of NCEMPA.

NCEMPA, its Participants and other entities that are subject to the reliability standards delegated their compliance responsibilities to ElectriCities. ElectriCities is registered with NERC as a Joint Registration Organization on behalf of NCEMPA's Participants and other members of the JRO that would otherwise be required to register with NERC individually, based on NERC's criteria for registration, in some or all of the following functional categories: Load-Serving Entity, Resource Planner, Purchasing-Selling Entity and Distribution Provider. ElectriCities staff manages an Internal Reliability Compliance Program to ensure the members of the JRO remain in compliance with all applicable NERC, SERC and RFC reliability standards and any additional requirements. As members of the JRO, the applicable NCEMPA Participants have agreed to cooperate fully with ElectriCities in the implementation of the IRCP and to perform any associated tasks to ensure continued compliance with the reliability standards.

#### **Cyber Security**

Cyber security threats to the electric sector are garnering increased attention as foreign operatives and others seek ways to disrupt the economy and the nation. NCEMPA, both directly and through its contracted plant operators, participates in and remains in compliance with cyber security standards developed by the NERC. On February 13, 2013, President Obama signed an Executive Order designed to increase the US Government's level of preparation for cyber threats and to facilitate industry coordination among the critical infrastructure sectors. The electric sector is the only sector that currently has mandatory and enforceable federal cyber security standards already in place. Nonetheless, the administrative actions to direct additional information sharing between the US Government and the electric sector are considered beneficial and should serve to enhance current actions.

#### North Carolina State Regulations

#### **Renewable Energy Portfolio Standard**

Under North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard, NCEMPA member cities must obtain up to 10 percent of their energy through renewable energy or energy efficiency resources by 2018. NCEMPA is committed to meeting the REPS requirements in a least-cost manner, while maximizing the benefits to its member cities. Compliance with REPS can be accomplished through any combination of the following:

- » Generate bundled renewable energy using renewable facilities
- » Buy bundled renewable energy from renewable facilities
- » Buy Renewable Energy Certificates
- » Reduce energy consumption via demandside management or energy efficiency
- » Buy all or part of energy requirements through a wholesale contract with a supplier that complies with REPS
- » Meet the cost cap by incurring incremental costs for some or all of the above

In 2012 the general REPS requirement began, and is escalated as follows:

» 2012 — 3 percent of prior year retail sales

- » 2015-6 percent of prior year retail sales
- » 2018 + 10 percent of prior year retail sales

Along with energy derived from unspecified renewable resources (General Requirement), the 2013 requirements included three "carve-out" requirements: energy derived from solar facilities, biomass energy derived from swine waste, and biomass energy derived from poultry waste. NCEMPA met its solar requirement and the General Requirement in 2013. However, the North Carolina Utilities Commission delayed the 2013 swine and poultry requirements until 2014 for all North Carolina utilities, including NCEMPA. The swine and poultry requirements were delayed because there were not enough swine and poultry biomass generators online in North Carolina to meet these statewide requirements in 2013.

To meet its future REPS requirements, NCEMPA has entered into several REC purchase agreements, including the purchase of:

- » In-state and out-of-state solar photovoltaic RECs
- » In-state wood waste biomass RECs
- » In-state and out-of-state poultry waste biomass RECs
- » In-state and out-of-state swine waste biomass RECs
- » Out-of-state wind RECs

Through these REC purchases, NCEMPA has secured its supply of RECs to meet the REPS requirements for the General Requirement, solar requirement and the poultry requirement through 2016. NCEMPA, along with the other North Carolina electric utilities, continues to solicit proposals from potential swine waste biomass electric generating facilities to meet the swine waste requirements.

In addition to the activities listed above, NCEMPA has been actively developing and implementing energy efficiency programs as another key component of the renewable portfolio. During 2013, NCEMPA continued to promote these incredibly valuable energy efficiency programs.

These energy efficiency programs include:

- » Commercial Lighting Rebate Program
- » High Efficiency Heat Pump Rebate Program
- » Commercial/Industrial RFP (request for proposals) for Energy Efficiency Projects
- » Commercial Solar Thermal Rebate Program
- » Municipal Energy Efficiency Projects

NCEMPA has been active at the NCUC, helping to shape the REPS program through filings and participation in working groups.

### **NCEMPA Investment and Outstanding Debt Overview**

		ortiono Stati	stics
Earnings		Income	Rate of Return
2013	\$	13,223,000	1.89%
2012	\$	15,110,000	2.21%
Market va	lue	as of 12/31	Average
		Value	Maturity(yrs.)
2013	\$	758,878,000	2.7
2012	\$	881,918,000	2.5
Dobt outo			
Fixed rate	tanc bon	ling as of 12/3 ds Balance	<b>31</b> Weighted Avg. Interest Cost
Fixed rate	tanc bon \$ 2	ling as of 12/3           ds         Balance           2,025,720,000	31 Weighted Avg. Interest Cost 5.2%
Fixed rate 2013 2012	tanc bon \$ 2 \$	Balance           2,025,720,000           2,159,770,000	31 Weighted Avg. Interest Cost 5.2%
Fixed rate 2013 2012 Bond reco	tanc bon \$ 2 \$ onci	ling as of 12/3 ds Balance 2,025,720,000 2,159,770,000 liation	31 Weighted Avg. Interest Cost 5.2% 5.2%
Fixed rate 2013 2012 Bond reco Bonds outs	tanc bon \$ 2 \$ onci	ling as of 12/3 ds Balance 2,025,720,000 2,159,770,000 liation ling 12/31/12	5.2% \$2,159,770,000
Fixed rate 2013 2012 Bond reco Bonds outs Matured 1/	tanc bon \$ 2 \$ onci stand (2/13	ling as of 12/: ds Balance 2,025,720,000 2,159,770,000 liation ling 12/31/12	<ul> <li>Weighted Avg. Interest Cost</li> <li>5.2%</li> <li>5.2%</li> <li>\$2,159,770,000</li> <li>\$ 134,050,000</li> </ul>

#### **Bonds Outstanding**

Series	Par Amount	
Series 1991 A	\$ 28,755,000	
Series 1993 B	333,545,000	
Series 2003 D	57,010,000	
Series 2003 E	17,605,000	
Series 2003 F	27,840,000	
Series 2003 G	1,130,000	
Series 2005 A	124,560,000	
Series 2008 A	336,800,000	
Series 2008 B	44,525,000	
Series 2008 C	32,645,000	
Series 2009 A	55,840,000	
Series 2009 B	371,735,000	
Series 2009 C	12,500,000	
Series 2009 D	14,035,000	
Series 2010 A	146,145,000	
Series 2012 A	84,330,000	
Series 2012 B	170,705,000	
Series 2012 C	29,385,000	
Series 2012 D	136,630,000	
Total	\$2,025,720,000	





#### PAYING DAYING DA

High Point City Manager Strib Boynton in the Nitor Qubein School of Communication at High Point University.

## HIGH POINT UNIVERSITY

> Paying it Forward

We're dedicated to advancing our members' communities and investing in their long-term success. In fact, that investment and care is a hallmark of public power. Public power communities are filled with folks that are invested in the long-term success of their communities, creating opportunities for their grandchildren and beyond.

Take reliability for instance. Industry data shows that NC Public Power communities provide more reliable power and restore power more quickly than investor-owned utilities. We're proud of that reliability and it's one of the key reasons that North Carolina has more Reliable Public Power Providers (RP3) than any other state.





NC Public Power communities are working to advance economic development investment. We launch initiatives that bring quality jobs and a steady tax base that's a boon for our communities. The City of High Point has seen a steady increase in capital investment over the past five years. In 2013, nearly 3,500 new jobs were announced in growing industries. High Point University is the city's largest electric customer. U.S. News & World Report ranked HPU number one regional college in the south. With students from over 30 countries and 40 states, world-class faculty, academic programs and facilities and commencement speakers like Colin Powell, Laura Bush and Steve Wozniak, HPU is, well, a high point in the region.



#### **Non-Power Agency Leadership**

#### Board of Commissioners and Alternate Commissioners as of December 31, 2013

Alternate Commissioners' names appear in smaller type

**Concord Mr. Robert Pate** Mr. Scott Chunn

Dallas Mr. James Douglas Huffman Mr. James M. Palenick

**Enfield Mr. Earl Harvey** First Alternate Vacant **Fayetteville PWC** Mr. Michael G. Lallier Mr. Wick Smith

**Forest City** Mr. John Condrey First Alternate Vacant

**Fountain** Commissioner Vacant First Alternate Vacant Kings Mountain Ms. Marilyn H. Sellers Mr. Nick Hendricks

New River Light & Power Mr. Edmond C. Miller Mr. Michael O'Connor

**Stantonsburg Mr. Gary W. Davis** First Alternate Vacant Windsor Mayor J.F. Hoggard III Mr. Allen Castelloe

Winterville Mr. Tony P. Moore Mr. Mervin Taylor

City	Revenues (000s)	Customers
Concord	\$ 78,871	27,298
Dallas	6,274	3,359
Enfield	3,722	1,300
Fayetteville PWC	183,625	87,072
Forest City	11,231	4,129
Fountain	545	315
Kings Mountain	12,192	4,154
Macclesfield	477	274
New River Light & Power	19,391	7,689
Pinetops	2,799	775
Stantonsburg	2,378	1,174
Walstonburg	248	125
Windsor	4,729	1,804
Winterville	5,847	2,881

#### **Non-Power Agency Participants**

#### **ElectriCities Services**

#### **Economic Development**

Once again this year, NC Public Power communities continue to see success with industrial recruitment and expansions of existing industries. ElectriCities Economic Development team markets communities domestically and internationally to attract new business investment and new job creation for our members – whether for retail/commercial or industrial recruitment. Our team also works closely with the NC Department of Commerce, the Regional Partnerships and county developers to further the strategic load growth efforts.

Source: 2012 EIA-861 Data

NCMPA1 members added 1,211 new jobs in 2013 with investments totaling more than \$275 million. New load added to NCMPA1 was approximately 16 MW.

NCEMPA members added 668 new jobs in 2013 with investments totaling more than \$42

million. New load added to NCEMPA was just over 4 MW.

Major industrial announcements in 2013 for NC Public Power communities include:

- » Nash Building Systems Inc. (Tarboro expansion) 29 jobs; \$2.2 M investment
- » ASMO (Greenville expansion) 200 jobs;
   \$93 M investment
- » ProNamic Industries (Washington) 52 jobs; \$8.5 M investment
- » Lee Controls (Southport) 77 jobs;
   \$2.5 M investment
- » OFS Brands (High Point expansion)
   188 jobs; \$9.25 M investment
- » Greenheck Fan Corp (Shelby expansion)
   184 jobs; \$30 M investment
- > Owens Corning (Gastonia) 110 jobs;
   \$120 M investment
- » Telerx Marketing Inc (Kings Mountain expansion) 160 jobs

#### **Safety and Training**

ElectriCities Safety and Training team is responsible for providing safety training and professional support to members' electric system personnel. ElectriCities Safety team provides an array of services such as training schools and workshops, on-site safety audits and training, accident investigations and administration of professional development tracks. ElectriCities Safety team also informs members of new safety legislation and best practices to reduce workplace accidents and lost employee time. The team stays up to date with the latest state and federal rules and regulations to ensure public power line crews have the best possible information and techniques to keep line crews safe.

The department manages the Safety and Training Team, a member-based group charged with ensuring that ElectriCities Safety and Training schools align with the needs and concerns of ElectriCities members. The team met six times in 2013 to plan new activities and monitor existing activities.

In 2013, Safety staff performed 24 on-site audits, 333 safety consultations, conducted 66 safety meeting presentations, and attended member safety meetings throughout the year.

ElectriCities recognizes members for safe work habits in annual safety awards presented during the North Carolina Association of Municipal Electric Systems Annual Meeting. During the 2013 meeting, 68 cities and towns were recognized for achieving no lost workday accidents during 2012.

ElectriCities' Safety and Training team facilitates many training opportunities throughout the year. ElectriCities continues its partnership with Nash Community College to offer a two-year associate degree in Electric Power Lineman Technology for member line worker employees who wish to participate. Nash Community College, located in Rocky Mount, N.C., provides classrooms with stateof-the-art audio and visual training aids and outside training grounds as a permanent training facility.

Other professional development opportunities are available through apprenticeship career development programs that provide tracks for member employees to follow, earning a certificate after completing the curriculum. ElectriCities Safety and Training has four separate apprenticeship programs for members to utilize for their employees: lineman, meter technician, substation and underground.

ElectriCities Safety and Training has two

full time trainers that assist in the instruction of the Lineman Career Development Apprenticeship Program for our members. The Lineman Career Development Program provides specialized training for employees who work on high voltage overhead power lines. With a renewed effort to involve more line workers in the Career Development Programs, 67 new students enrolled in the lineman program in 2013, two new students enrolled in the Substation Career Development Program, four new students enrolled in the Meter Technician Career Development Program, and five new students enrolled in the Underground Career Development Program.

ElectriCities Safety and Training provides electric power line employees with training opportunities to enable them to perform their jobs in a safe and proficient manner. In 2013, ElectriCities provided 14 schools and workshops to accomplish these goals. Schools are held on topics such as:

- » Basic and Advanced Meter
- » Basic, Intermediate and Advanced Lineman
- » Basic and Advanced Underground
- » Distribution Regulator
- » Substations
- » Transformer
- » Troubleshooting
- » National Electric Safety Code
- » Leadership Skills
- » Tree Trimming

#### **Government Relations**

The ElectriCities Government Relations team is dedicated to ensuring the interests of public power communities in North Carolina. The Government Relations team actively participates in the legislative process and strives to provide member cities with pertinent information and an outlet to voice their concerns. The team's lobbying efforts work closely with the Public Power Grassroots Network to ensure the successful future of NC Public Power communities.

The Legislative Steering Committee, a committee of the ElectriCities Board of Directors, is actively involved in shaping the organization's legislative agenda. The primary focus of the Legislative Steering Committee is to promote public power and protect public power communities from any detrimental legislation on many issues, including electric territorial rights, pole attachment rates, terms and conditions, low-income customer assistance and inter-governmental relations.

During the 2013 legislative long session, the Government Relations team successfully lobbied to have a special "hold harmless" provision included in the tax reform legislation. The provision protects power agency cities from losing existing state revenue caused by the repeal of the gross receipts franchise tax on sales of electricity.

The federal legislative agenda includes support for preserving tax-exempt financing, sensible and workable environmental legislation and regulation and other legislation that affects public power collectively. The Government Relations team works with national groups such as the American Public Power Association and the Large Public Power Council to be effective.

The Government Relations team is also active in grassroots efforts to build interest in public power. Some of the community relations activities the team participates in include Days of Caring, a local initiative with city staff and officials to install low-cost energy efficiency products in low-income customers' homes and public school education events planned in partnership with city staff, elected officials and the local school systems.

# Industrial/Commercial Services and Programs

ElectriCities staff and city representatives continue to focus on retaining large industrial accounts, commercial accounts and other key accounts. Power Agency Participants recognize the important roles these key accounts play in their cities and towns. The customer retention program includes innovative rate structures, customer education and energy solutions provided through ElectriCities Energy Solutions Partner program. For example, new on-peak rates and customer generation rate riders allow customers to reduce demand for energy during periods of high power costs. Commercial and industrial customers have access to day-long seminars and shorter webinars on subjects ranging from energy management and sub-metering to power restoration. The ESP program connects workshop attendees and energy audit recipients with their local energy provider and an alliance partner. Programs offered and implemented with key account customers include back-up generation, energy-efficient lighting, power quality surveys, HVAC solutions and overall energy management systems.

A major focus of our Key Account Management program is providing facility solutions to commercial and industrial customers to help them improve their energy efficiency and lower overall energy costs. During 2013, ElectriCities Key Account management team performed more than 70 energy assessments for commercial and industrial customers. These energy assessments provide customers with a tailored report that summarizes overall electric costs, a monthly detail of energy usage, and a list of specific recommendations. The Key Account Management team will assist customers with detailed project design and analysis during implementation as well as follow-up measurement and monitoring of the results. In addition, the Key Account Management team performed a number of power quality assessments which provided commercial and industrial customers with information designed to improve reliability at their facilities.

During 2013, nearly 30 NCMPA1 commercial and industrial customers received rebates for implementing energy efficient lighting retrofit projects that will result in energy savings of more than 3,000 MWh per year for these customers.

#### **Residential Energy Education and** Weatherization Assistance Services

ElectriCities offers programs and services to help members address the needs of residential customers. Active residential programs for 2013 included Energy Depot for Homes; a set of online, interactive marketing and customer service applications; residential in-home energy survey service; distribution of energy efficiency kits; and something new for 2013, E-Tracker, an energy education program for member high schools.

Energy Depot applications include the following: Personal Energy Profile, an online, do-it-yourself home energy audit; Energy Calculator, allowing customers to quickly calculate the electric energy use and costs for the full range of home energy systems and appliances; and Energy Library, which offers a wide selection of fact sheets that address home energy systems, appliances and products. Customers of NC Public Power communities made over 10,000 visits to the Energy Depot website in 2013.

The Residential Energy Survey Service team provides free in-home energy surveys to residential customers and training and support for ElectriCities members' staff. Over 500 energy surveys were conducted in 2013 for residential customers. The program also promotes energy education and awareness through local workshops, seminars and community-based meetings. Eighteen energy education and assistance workshops were provided to retail customers during 2013.

The Energy Efficiency Kit is designed to help residential customers understand energy usage and its effect on energy bills. The kits contain: four compact fluorescent lamps, a low-flow 2.5 gallons/minute showerhead, spray foam sealant, stick on and refrigerator magnet thermostats and a HVAC filter whistle. In 2013, more than 5,000 Energy Efficiency Kits were distributed by ElectriCities members.

The Residential Energy Survey Service team continued to market North Carolina's Weatherization Assistance Program throughout NC Public Power communities during 2013. The WAP is administered through the NC Energy Office, utilizing a network of local weatherization agencies serving all counties in the state. Team efforts included referring energy survey customers that might be candidates to their local weatherization agency. The team also participates on the State's Weatherization Team. These marketing efforts resulted in 166 customer referrals to the WAP during 2013.

E-Tracker, a new service for 2013, was delivered to four member high schools in

Rocky Mount, Clayton, Lexington and Shelby. Funded in part by a \$21,000 American Public Power Association grant, E-Tracker teaches high school students about the relationship between daily energy use and degree days, a daily weather index. Students were instructed to apply the scientific method to solve this question: how does the weather affect my utility bill? In the process, students were instructed on how to apply statistics, including linear regressions and correlation coefficients, to learn about this relationship that affects every utility customer.

#### **Strategic Communications**

The ElectriCities Strategic Communications team functions as an in-house marketing, public relations and advertising group focused on promoting the value of ElectriCities, NCEMPA, NCMPA1 and the communications goals of our members. The Strategic Communications team is available to all members to provide consulting and design service for local projects. The consulting, design and communications planning services are all provided free of charge to ElectriCities members.

The Strategic Communications team maintains a supply of electric utility standing customer communications pieces, including bill inserts and videos on topics such as energy efficiency and storm preparation. The bill insert service is one of the most popular offerings of the department, with more than 500,000 bill inserts distributed in 2013. The department also produces several newsletters: Hometown Connection, a newsletter that communicates the good news of public power; Developments, an economic development-focused quarterly communication promoting sites in North Carolina; Community Circuit, a newsletter designed for non-Power Agency members; and Currents, an e-newsletter that provides updates specifically on customer communication topics.

The Strategic Communications team plans an awareness/celebration campaign each year for Public Power Week. The campaign focus is always based on current electric utility topics and interest points. Public Power Week provides a designated time for public power communities to celebrate the advantages that locally owned and operated electric utilities provide. In 2013, the Public Power Week theme was Neighbors with Know-How, focusing on NC Public Power's record of superior, hometown customer service.

In 2013, the Strategic Communications team focused on communicating the value of ElectriCities to our stakeholders, including a new website, Delivering Value. The website features case studies showing ElectriCities' partnership with members to meet local goals.

The Strategic Communications team serves as the marketing arm for the Economic Development team. The department produces marketing materials, advertisements, trade show materials and displays to enhance ElectriCities overall economic development activities. We were pleased to be presented with several communications awards in 2013, including awards from the Triangle Advertising Club, NC Public Relations Society of America and the Southern Economic Development Council.

#### **Utility Operations Services**

A variety of utility operations services are provided by ElectriCities Member Services department. These programs are designed to provide support for members' electric distribution systems and customer service programs.

Distribution systems support programs include: the Operations Standards Team,

statewide service contracts, the Emergency Assistance Program, assistance with APPA's Reliable Public Power Provider program, assistance with APPA's eReliability Tracker program, and hosting an online forum for Utility Directors to share best practices. In 2013, staff started a new initiative to offer an online material safety data sheet management program.

The Operations Standards Team is a member-based team that is comprised of Utility Directors with the mission of developing safe, efficient work practices. The team produces the "Guidelines for Municipal Electric System Construction", which includes overhead construction drawings, underground construction drawings and procedures and metering guidelines and procedures. The guidelines are updated each year, and in 2013 the Operations Standards Team began working on a work order system that will utilize the guidelines and the material database.

The Member Services team administers the Statewide Service Contracts programs to help public power communities take advantage of volume pricing discounts. Current contracts are in place for: tree trimming, aerial device testing, meter testing, infrared scanning, in-ground pole testing, substation maintenance, oil testing and PCB audit assistance.

The Emergency Assistance Program provides support to members during emergency restorations. All the members participate in this program and willingly provide support to each other during restoration efforts. The Member Services staff keeps updated mutual aid agreements and contract information to allow quick response and dispatch after storms. The EAP was activated for several regional storms in 2013, with the most assistance being required during a storm system that passed on June 6, 2013.

The Member Services team participates in state and regional planning teams, such as the Southeast Public Power Disaster Response Group and APPA's Mutual Aid Working Group, to ensure the EAP uses the latest practices in planning and recovering from outages.

The RP3 program, APPA's initiative to promote and recognize excellent public power utilities, is supported by the Member Services department. The Member Services team assists members by promoting the program, providing information necessary to complete applications, answering questions, and reviewing applications. The program has been very effective and has resulted in North Carolina having the most RP3 designees of any state in the country.

Proving that "public power is more reliable" became a mission led by the Member Services team. Members participated in the program by providing reliability data from their distribution systems. The data is collected each year, and in 2013 it represented over 87 percent of the total load for the public power communities in North Carolina. Using Institute of Electrical Electronic Engineers reporting standards, the data collected was compared directly to information submitted by the investment-owned utilities to the North Carolina Utilities Commission and it proved that NC Public Power is more reliable. For 2012. NC Public Power had a CAIDI of 66.06 minutes and a SAIFI of 0.61 outages. This means that the average restoration time for NC Public Power was 66.06 minutes, and each NC Public Power customer had on average 0.61 outages throughout the year of 2012. For comparison purposes, Duke Energy Progress had a CAIDI of 94.52 minutes and a SAIFI of 1.46 outages in

2012, while Duke Energy Carolinas had a CAIDI of 142.72 minutes and a SAIFI of 1.03 outages in 2012. The 2013 reliability data will not be collected until mid-year 2014.

The Member Services team also offers free subscriptions to APPA's eReliability Tracker to help members track outages and obtain their reliability indices. Having a reliable power supply translates into a direct economic benefit to the communities.

In 2013, Member Services and the Operations Standards Team began reviewing various online MSDS management programs. Member Services has decided to move forward with the project and plans to offer the service to all members in 2014, after a pilot project is completed.

The Member Services team also provides an array of services that promote customer service and business operation excellence. Examples include webinars on customer service practices and emerging issues, hosting forums for Customer Service Managers, facilitating online forums for discussions among peers, offering customer service training workshops and providing business operations and regulatory assistance.

Guidelines for customer service policies are also kept by Member Services staff and are available to all members as a reference manual. Customized customer service training is available to members as needed.

The Member Services team also coordinates the Regional Meetings, a CEO-sponsored initiative to meet with local elected officials and provide key updates on Power Agency operations and public power emerging issues.

#### **ElectriCities Annual Conference**

The ElectriCities Annual Conference was

held August 1-3, 2013, at the Grove Park Inn in Asheville, N.C. Members from across the state came together to learn about news and issues affecting public power communities. The conference provided the only forum of its kind for public power leaders to gather to network and discuss North Carolina-specific issues. In 2013, over 400 public power officials attended the conference.

Speakers included Lynn Minges, President and CEO, North Carolina Restaurant & Lodging Association; John W. (Bill) Pitesa, Sr. Vice President and Chief Nuclear Officer, Duke Energy; Mike Mace, Managing Director, Public Financial Management; Dr. Dale Henry, President and Founder, Your Best Unlimited; and Marty Clarke, President of Martin Production.

The 2014 Annual Conference will be held in Pinehurst, N.C., and will focus on utility operations, economic development, customer service and best practice sharing.

#### **Customer Information Systems Program**

ElectriCities Information Technology team provides a CIS hosting service to members, as well as related assistance in best practices and software evaluation. The CIS is a state-ofthe-art product provided by NorthStar Utilities Solution. The software is hosted at ElectriCities' Raleigh data center, providing a high availability, secure infrastructure and technical support allowing members to focus on managing their customer service operations. The IT team support and maintain the production, test, backup and disaster recovery environments. Application level support is offered to the members providing faster response than typical with vendor help desks. The close working relationship with the members also enables them to recommend business process improvements

and opportunities to better utilize the software. In addition to the CIS Help Desk function, the staff also provides training on new functionality, as well as for new employees.

The current members using the hosted CIS are Albemarle, Cherryville, Cornelius, Huntersville and Morganton. In 2013 these members managed accounts for 34,000 electric customers, billing approximately \$118 million in municipal revenues. NorthStar is used for meter inventory, service orders, billing, credit, collections, call management, executive reporting and web bill presentment and payment. The NorthStar system is capable of billing electric, water, sewer, refuse/garbage, gas and other miscellaneous city services. It also is used by utilities throughout North America in Advanced Meter Information and deregulated environments.

Shelby, Laurinburg and Concord also use NorthStar CIS and are part of the ElectriCities and Regional User Groups. The User Group met in April 2013 for training, to learn about system upgrades, enhancements and partner products, and to share best practices.

Any city interested in the hosted CIS service offering can learn more through onsite demonstrations facilitated by ElectriCities IT staff. In addition to the comprehensive functionality available in NorthStar, there are financial benefits through shared costs with other members, reliability and redundancy available through the shared infrastructure, and staff assistance for project management, training and ongoing support, making the hosted approach a comprehensive value-added service for members.

#### Huntersville/Cornelius

The Towns of Huntersville and Cornelius contract with ElectriCities to manage the

operation of their electric systems. The combining of the electric operations in 1997 continues to minimize operating costs and provide value for customers of the towns. The ElectriCities team at the Huntersville/ Cornelius office are involved in the local community and participate in economic development activities and recruitment.

As the total customer base continues to grow, ElectriCities continues to provide customers with bill pay options that include access to online bill pay and view billing and usage information on the department's website. There has also been an increase in social media updates through Twitter and Facebook to notify customers in the event of power outages.

The Huntersville/Cornelius combined electric operation continues to provide economies of scale to minimize operating costs, enabling both towns to maintain competitive electric rates in the region.



The energy behind public power