

***Sterling Municipal Light Department***  
50 Main Street  
Sterling, Massachusetts 01564-2135  
Tel: (978) 422-8267  
Fax: (978) 422-8054  
www.energysterling.com

## **2013 Annual Town Report**

Respectfully submitted is the one hundredth and third report of the Sterling Municipal Light Department (SMLD).

### **POWER**

The SMLD's Customer base has decreased to 3,717 (-9 accounts) as of December 31, 2013. We have 3,334 Residential, 138 Industrial, 204 Commercial, 31 Municipal, 9 Government and 1 Town Streetlight accounts.

A total of 59,800,215 kilowatt hours (kwhrs) of electricity were sold during the calendar year 2013. This represents an increase of 1,336,405 kwhrs over calendar year 2012. Sterling's hourly peak demand was 12,291 kW set in July of 2013. That is a reduction from the peak set in 2012.

The SMLD uses reliability indices to see how our distribution system is performing and to measure our response to system interruptions. The 2013 *System Average Interruption Duration Index* (SAIDI) for normal outages affecting the Town of Sterling residents was 18.05 minutes per incident. This compares to a nearby investor owned utility's SAIDI numbers that averaged 102 minutes per incident in 2011 (latest information posted). The 2013 *Average Service Availability Index* (ASAI) of electricity for Sterling residents was 99.9965 %. The 2013 *Customer Average Interruption Duration Index* (CAIDI) numbers represent the average time required to restore service to a customer per sustained outage. These numbers came in at 66.7 minutes and were slightly higher from 2012. We attribute this to the greater number of poles hit by motor vehicles in 2013 that affected restoration time. Overall, our system interruptions have been decreasing. This is a reflection on the continued wire replacement and equipment and substation upgrades being performed by our Operations Department.

Although we cannot control the rising cost of transmitting power to our substation, we are able to lower our demand cost by locally producing our own energy using alternatives that do not require transmission. The E.H Perkins Solar Array on Jewett Road is a 1 megawatt (MW) solar array that went online in December 2011. In 2013 this project produced 1,346,209 kwhrs of clean renewable energy at below market prices to the residents of Sterling and does not require transmission for distribution purposes. During 2013 we also received 3,509,028 kwhrs from the solar projects located on Wiles Road. These two 1 megawatt solar arrays on Wiles Road began construction in October of 2012 and began producing energy in early January 2013. These two projects combined produce enough energy to power 530 average residential customers for one year. We continue to pursue alternative sources of power with competitive pricing to provide us with sustainable energy without producing damage to our environment.

## OPERATIONS

The following list summarizes completed and projects in progress for the Operations Department.

- Upper North Row –In 2013 we installed over 8,200’ of tree wire to replace the copper wire and interval pieces of tree wire, some of which was damaged during the ice storm. We also replaced the transformers and converted this area from 2,400 volts to 8,000 volts increasing voltage support and system reliability.
- We completed the Osgood Road project that included the installation of 6,200’ of new 1/0 tree wire, the removal of 6,200’ of bare #4 copper wire and completing the installation of a new secondary cable and 1/0 neutral for better system grounding.
- On Sherwood Road we replaced the existing copper wire with tree wire and installed new transformers while converting the area from 4,160 volts to 8,000 volts increasing voltage and system reliability.
- On Griffin Road we replaced the existing copper wire with tree wire and installed new transformers while converting the area from 4,160 volts to 8,000 volts increasing voltage and system reliability.
- On Elizabeth Lane we upgraded to 8,000 volts. The completion of the above projects gives us only one system voltage eliminating the need to carry multiple voltage transformers, reducing inventory and cost.
- The Fox Run Road and Birch Drive project was completed in 2013. This project involved the installation of 9,800’ of conduit and underground primary cable, replacing the existing 30+ year old direct buried cable that has had multiple failures. In 2013 we completed the replacement of the transformers and cable transfers. The SMLD would like to extend a special thank you to the residence of the Fox Run and Birch Drive area for their patience throughout this project.
- The above mentioned projects were performed as part of our continuing effort to upgrade our distribution system to minimize outages and improve our reliability.
- Installed 10 new house services and removed 3.
- We Installed and removed 9 new poles.
- We replaced the underground cable in the last of four switches at the Chocksett Substation. After a failure in 2008 we began systematically changing one each year for the last four years at a cost of \$20,000.00- \$23,000.00 each.
- In 2013 we preformed our 18 month rate study. The last rate study was completed in 1998. The results demonstrated reducing our rate count from 32 to 8 while aligning our rate classes with their corresponding costs. Meetings were held with those most affected and we feel the implementation, while not without missteps, went very well. The rate structure and the effect on customers’ rates will continue to be reviewed throughout 2014.

## **POWER SUPPLY**

In an effort to diversify our power resources and stabilize purchased power costs, we purchase electricity through fixed contracts and open market power purchases. Purchased power costs reflect the generation and delivery of electricity to the Town of Sterling. There are many circumstances beyond our control that make the cost of electric energy fluctuate. These include periods of peak power demands during extreme temperatures, including December of 2013, unexpected plant shutdowns and spikes in fuel prices. Changing costs are triggered by a number of unpredictable events from the fluctuating fuel commodity markets to global unrest. Natural gas prices have declined in the last few years, but challenged with the uncertainty of the delivery. During cold spells constraints on the gas transmission lines are common. This leads to curtailments at the generating plants requiring them to switch to oil, a costlier alternative. Energy produced from natural gas has risen from 5% in 2000 to 57% in 2013 and is expected to continue to rise until new gas transmission pipelines can be put in place. Despite these concerns in 2013 our power costs have remained stable.

Although fuel remained steady our transmission costs continued to rise. These costs have increased mainly in part that transmission owners receive large returns between 11-14% on their 6.6 billion dollar investments in transmission line upgrades in New England. This cumulative number is expected to rise to 11 billion in 2017, putting additional upward pressure on transmission prices. The Regional Network Service (RNS) rate rose by 22% from \$605,664 in June 2011 to May 2012 to an expected cost of \$940,264 from June 2014 to May 2015, a 55% increase. This cost is expected to continue to rise to an estimated cost of \$1,166,155 in June 2017, an additional 25% increase. Along with other Municipal Light Plants and Associations we continued to contest these charges in Washington with our Legislators and the Federal Energy Regulatory Commission (FERC). The outcome of these meetings has resulted in the filing of various bills to lower these incentives on future projects.

The SMLD continues to monitor the transmission charges that we receive from ISO New England that operates the region's electric power system. The shared goal is making reliability a top priority in the operation of the power grid. Before new rules and procedures are implemented we must carefully take into consideration the cost to the consumers.

During 2013 we re-negotiated four of our existing hydro contracts and added one additional contract. The result was the cost of the purchased power being reduced by an average of 14%. Our power supply consists of a mixed portfolio of power agreements including the previously mentioned solar projects. These agreements consist of Hydro Power, (specifically from Baltic Mills, Contoocook Hydro, Mechanicsville Hydro, Clean Energy Hydro, Methuen Falls Hydro, Public Authority State of New York Hydro (PASNY) and Centennial Falls Hydro Electric Facility. We are continuously exploring other cost efficient renewable energy supply options for our power portfolio including the recent purchase of 8.3% of the output from the Princeton Wind Project. In 2013 over 21% of our power was received from renewable energy sources, including 2,724,629 kWhrs from the Berkshire Wind Project that has maintained a capacity factor of over 37% in 2013. This exceeds the Massachusetts requirement (Municipal Light Plants are exempt) for renewable energy supply in power portfolios of 20% by 2020. In addition, we receive nuclear power from the Millstone III Plant and the Seabrook Power Plant in New Hampshire. Other sources of our power supply come from the MMWEC Stony Brook Plant, combined cycle units I & II, and the Carbolon generating facility.

We continue to offer the following assistance programs to our Residents:

- HELPS Home Energy Audit (no cost to residents)
- Energy Star® Rebate Program
- Solar Installation Assistance
- Kill-A-Watt™ Electricity Usage Monitor
- TESCO Surge Arrester
- Customer Data/Billing Portals
- Multiple Payment Option

Other community activities/contributions sanctioned by the SMLD Light Board:

- Our Annual Open House
- Install and Pay for the Town Common Lighting
- Sterling Fair (provision of power)
- Banner Hanging
- Town Street Lights – replaced 25 lights along Main Street with LED fixtures, reduced rate and full maintenance of the 489 streetlights by the SMLD for the Town of Sterling.
- Provide funds for annual maintenance of town owned generators.
- In November 2012 SMLD contracted with GDS Associates Inc. at a cost of \$35,000 to perform energy audits on 7 of Sterling Municipal buildings. These audits are based on a level II, the American Society of Heating, Refrigeration and Air Conditioners Engineers (ASHRAE) standards. A completed report was received in September 2013. Working with the Town of Sterling facilities Manager, Tom Rutherford and the Monty Tech Industrial Technology Department led by instructor Bill Stuessy, we were able to begin immediately assessing and performed conservation measures identified in the various buildings. To continue correcting some of the deficiencies noted in this report, the SMLD has budgeted \$35,000 for 2014.

## **Changes at SMLD**

### **Natural Gas**

### **Structural Repairs/Renovations**

In 2013 we began to assess the structural integrity of the 50 Main Street facility, this facility was built in 1885 and has served the Town of Sterling well, the review was brought about by the uneven floors and door jams as well as cracks appearing in 2 year old painted walls. It was determined that the building has begun to sag over the years, primarily caused by rotting support posts in the basement and various construction projects that have been performed over time that included removing some supporting sections. A plan has been developed to address this situation and with your support and patience the building will serve us another 130 years. At the close of 2013 we are preparing to go out to bid to have a qualified contractor come in, support the sections of the building needed to replace the supports as well as install new cross member beams in the lower and part of the upper floors. We will need to remove ceilings and non-bearing walls in the lower floors area to get this accomplished, we felt this would also provide an ideal time to renovate the office area to make it more customer friendly, after receiving design quotes, we began working with Philpot Corporation on a design that would serve the needs of the SMLD, keeping cost and efficiencies in mind. We have also begun talks with Monty Tech about having students

perform the renovations after the structural work is complete. This would provide a great opportunity for the student to apply their craft at a substantial savings to the ratepayers of sterling. We know this may extend the duration of the project but feel the results will prove beneficial. We are looking to temporarily offer the right side door of the SMLD as an entrance to the relocated office space that will now be in the board room area until the project is complete. We once again will ask your patience as we perform this project and be assured we will do everything possible to minimize the inconvenience to you.

Tree trimming services are primarily provided by outside contractors using a competitive bid process while additional tree trimming is also performed by the SMLD line crew.

In July of 2013 the installation of the new body and bucket was performed on the cab chassis we purchased in the fall of 2012 and the bucket truck was put into use, we will continue with the replacement of the aging vehicles using an annual replacement schedule to reduce overall maintenance cost and minimize impact to our capital budget.

In 2013 there were no Workmen's Compensation claims or lost time reported. This is the third consecutive year we have had no claims, this not only lowered our workmen's compensation insurance premiums but also qualified the SMLD for the American Public Power Safety Award, recognizing public power utilities across the country who reach this milestone.

We want to acknowledge the DPW for their assistance throughout the year with vehicle maintenance by providing oil changes and small repairs. The Water Department contributes in the reduction of our power demand by shedding loads during peak periods, reducing our transmission costs.

In October 2013 we began taking readings on the new AMI water meters, this utilized the existing AMI infrastructure already being used by the SMLD to read meters , we look forward to the completion of this pilot program and maximizing the AMI system working with the Water Department to assist in reading their meters.

Starting in 2011 and throughout 2012 a cost service study was performed. This study reviewed our rates, revenues and expenses. In October of 2012 the Board of Commissioners accepted the recommendations from the study and beginning in June 2013, the number of rates we offer was reduced from 32 to 8. We also began making rate changes to assure that we are providing fairness to each rate classification. With the exception of the Heat Storage and Controlled Service rates, the Residential rates were not affected. Our Commercial and Industrial customers saw an increase of about 6-7% with the new rates. A good portion of the increase was off-set by a two year reduction in the PPAC (.0340/kwhr to .0140/kwhr), averaging a 15% decrease in the rates. A letter explaining these changes was enclosed with your bill.

In May 2013 Michael Rivers was re-elected to a three-year term on the Light Board Commission.

In order for the SMLD to provide the best possible service to the residents and businesses it is essential that we work closely with other town of Sterling departments. I would like to take this time to extend a sincere thank you to all the town departments and their employees for the assistance that they provided to the SMLD throughout the year.

I want to offer a special thank you and acknowledgement to the SMLD employees during these transitional times and offer congratulation to all of you for the American Public Power Safety Association 2013 Safety Award of Excellence, this award clearly demonstrates your commitment to working safely at SMLD and to be recognized nationally with your peers is quite an honor.

Respectfully Submitted,

Sean Hamilton  
General Manager

Sterling Municipal Light Board Members:  
Matthew Stelmach, Chairman  
Michael Rivers, Vice-Chairman  
George Pape, Clerk

February 21, 2014