



MLGW

# Green Initiatives and Community Engagement

2019 Annual Report



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# MLGW is Committed to Preserving the Environment and Helping its Communities

Memphis Light, Gas and Water Division's main purpose is to benefit the Memphis and Shelby County communities. Although our primary activities are focused on providing affordable and reliable utility services to our customers, MLGW supplies substantially more value than these services alone. Through the generosity of our employees, and the consistent efforts of the Division, MLGW seeks to enhance the lives of those in our service area and to help secure a bright future for generations to come. The intent of this annual overview is to serve as a document that highlights our most prominent efforts and illustrates the significance of organizations making responsible citizenship an active priority. We constantly strive to further our positive influence and to continue our role as a community leader.

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# Conservation at Home

Saving energy begins with you, the individual. Providing resources for residential customers to monitor and reduce their usage is a vital part of our mission to do what is best for those we serve. Not only does conservation save money for the individual customer, it helps keep rates low, benefiting everyone.

## eScore

eScore is a residential energy program that provides homeowners with a clear path to make their home a 10 – its most energy efficient. The program also increases home comfort, saves money and connects participants with quality contractors while offering assurance that the work is done right.

eScore allows homeowners to work toward a score of 10 for their home at their own pace, earning rebates on qualified smart energy technology upgrades and re-engaging with the program as many times as needed to achieve their home's best possible energy performance. Registered homeowners have two options to join the program:



- 1. Get an eScore evaluation upfront.** For a \$75 fee, a professional energy advisor will evaluate your home and provide a list of recommended improvements on making your home more energy efficient. Then, the homeowner selects a contractor from the TVA-approved Quality Contractor Network to begin the desired improvements.
- 2. Start work with a TVA approved contractor and get an evaluation after the work is finished.** The contractor will discuss options, available incentives for eligible improvements and program details with the homeowner.

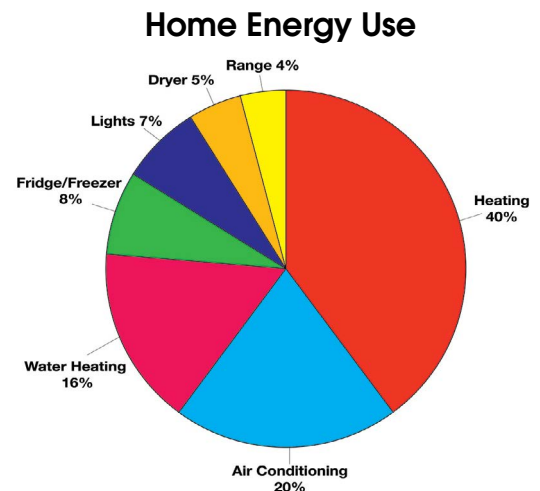
**The eScore evaluation includes a detailed eScore report that contains:**

- An eScore card that ranks the home from 1–10
- A customized list of energy-efficiency upgrades that can be made over time to achieve a rating of 10
- A list of rebates for qualified smart energy technology upgrades
- Photos of evaluated areas
- Instant-saving measures installed at the time of the home evaluation

To learn more and register, visit [2escore.com](https://2escore.com) or call 1-855-2eScore (237-2673).

## My Account – Residential

MLGW's comprehensive My Account customer portal enables customers to better understand their homes' energy and water usage and costs. Residential customers visited My Account more than **1.7 million** times in 2019, viewing more than **10 million** pages of content to analyze bill changes, see bill history, view smart meter data and learn about energy-saving opportunities for their homes. Bill History, Bill Analysis and My Meter Data were among the most accessed features. My Account also provides options to view bills, pay bills electronically and enroll in paperless eBilling, which reduces clutter and saves on paper and postage.



Among My Account users in 2019, nearly 1,000 customers qualified to receive a free TVA energy kit, including common household items to start saving energy immediately. To qualify, log in, click “Explore Usage” then click “My Home Energy Advisor” and complete at least one category in the Energy Profile. Since this promotion began in 2008, more than 40,000 residential customers have received free energy kits as well as customized recommendations and the ability to track their savings goals.

## Smart Meters

By the end of 2019, MLGW and its contractor had installed about 900,000 smart meters across Shelby County, enabling new features and customer benefits. Nearly all residential customers have smart meters for every MLGW service and installs are well underway for businesses and organizations too. MLGW remains on target to finish the one million-meter system upgrade in 2020.

With this quantity of meters, it’s no surprise that MLGW manages tens of thousands of meter alerts each month – including tilt/tamper alarms, water leak alerts, outage alerts and voltage alerts.

This two-way communication with utility meters is what makes them “smart.” It allows MLGW to monitor the meters’ operational status as well as collect consumption information daily. These alerts help reduce utility theft, notify customers of potential water leaks and identify potential hazards which may not be apparent yet to customers at the property.

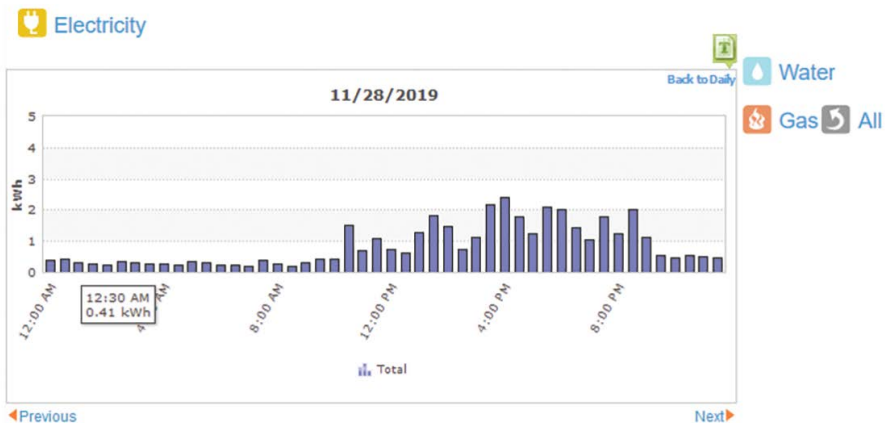


## What Does Your Smart Meter Data Mean?

Smart meters provide two types of usage data: daily billing read and interval data. Think of the billing read as an odometer reading on your car. If you were taking a trip, you might record the start and stop odometer readings to determine the total miles driven. That’s essentially what MLGW does when it calculates your utility usage: we subtract the last billing cycle’s reading from the current billing cycle’s reading.

Interval data, in comparison, is time-stamped data that shows the pace at which utilities were used throughout the day. Think of it as your car’s fuel economy. A car’s fuel usage varies based on speed, road conditions and other factors. MLGW uses the daily billing reads for billing.

We show the interval data in My Account to help you understand when your home used electricity, gas and water so you can link your household activities to utility use and costs. For more information, visit [mlgw.com/smartgrid](http://mlgw.com/smartgrid).



# Conservation for Business

As a leader in the community, MLGW sets an example by being smart about energy usage. To encourage other organizations to follow our lead, we provide and promote a number of programs designed to incentivize conservation, energy efficiency and sustainable practices.

## TVA Energy Right Solutions for Business/Industry

Choosing to use energy wisely is a winning proposition for every company. TVA's Energy Right Solutions program helps MLGW business customers make smart energy choices to boost their bottom lines. Whether businesses want to be more energy efficient, increase productivity or enhance competitiveness by adopting emerging electric technologies, the program offers expert guidance and incentives to help businesses make the transition to a more energy-conscious facility.

In 2019, MLGW's business customers finished 24 projects. They included some of the last projects that focused on energy efficiency upgrades (such as lighting, heating, cooling, and kitchen equipment) as well as projects that addressed smart electric technologies (new exterior LED lighting, electric forklifts and electric golf carts)



Learn more at [energyright.com](http://energyright.com).

## My Account – Business

Businesses and organizations can register and access My Account at [mlgw.com](http://mlgw.com) to view information about their MLGW bills. Up to 24 months of billing history, including consumption and costs, can be viewed, graphed and downloaded.

In addition, small to mid-size businesses have access to bill analysis tools to identify factors that caused bills to change. Each month, an average of 4,991 unique users log in to view their commercial account information.

In 2019, MLGW saw more than 154,000 user sessions among businesses who viewed more than 1.2 million pages of My Account content. By downloading usage data, it eliminates the need to enter data manually and cuts the clutter of paper bills. Learn more at [mlgw.com](http://mlgw.com).

The screenshot shows the 'My Account' interface with a 'Bill History' section. It includes a table with columns for Bill Date, Gas Usage (Ccf), Gas Charges, Electric Usage (kWh), Electric Charges, Water Usage (Ccf), Water Charges, Other Charges, and Total Current Charges. The table contains data for bills from 8/09/2019 to 2/18/2019.

Bill Date	Gas Usage (Ccf)	Gas Charges	Electric Usage (kWh)	Electric Charges	Water Usage (Ccf)	Water Charges	Other Charges	Total Current Charges
8/09/2019	11,654.0	\$4,022.27	354,000	\$34,656.73	1,292.0	\$2,456.54	\$4,581.79	\$45,717.33
7/12/2019	7,432.0	\$2,757.41	378,600	\$36,409.48	1,293.0	\$2,458.12	\$3,667.83	\$45,292.84
6/19/2019	10,080.0	\$4,245.49	402,000	\$37,212.97	1,509.0	\$2,797.28	\$4,404.50	\$48,660.24
5/21/2019	10,964.0	\$4,958.61	364,800	\$32,059.27	1,011.0	\$2,015.32	\$3,321.01	\$42,354.21
4/16/2019	15,184.0	\$6,225.90	368,400	\$33,249.70	1,096.0	\$2,148.79	\$3,503.94	\$45,128.33
3/22/2019	20,079.0	\$8,888.64	396,000	\$36,374.87	1,023.0	\$2,034.16	\$3,354.58	\$50,652.25
2/18/2019	18,213.0	\$9,211.14	394,200	\$36,307.11	1,573.0	\$2,809.60	\$4,531.48	\$52,859.33

# TVA EnerNOC Demand Response

Each month, MLGW records an electric system peak based on simultaneous electricity use among our 432,000 customers. These system peaks can add hundreds of thousands of dollars in demand charges to MLGW’s wholesale electricity costs, which are then passed to customers through the electric rates, even if the peak lasts just a few minutes.

Likewise, TVA sets a peak based on the collective electricity use of all the region’s energy users. These maximum levels are important because TVA must supply enough electricity to meet the system peak, no matter how high it is or how briefly it lasts. TVA can meet that peak by:

- Operating reserve power plants
- Buying supplemental electricity at market prices, or
- Building new power plants

Each option carries significant cost, so TVA bills utilities for peak demand to encourage utilities –and their customers – to help control that peak. By doing so, everyone helps control power costs.

Another way to control system peaks is by signing up for the TVA-EnerNOC Demand Response program. The

program pays businesses and organizations based on their willingness to reduce electric use during requested periods. Each participant receives a free demand response audit to find potential actions, communications to provide real-time electric load details and online access for tracking electric load.



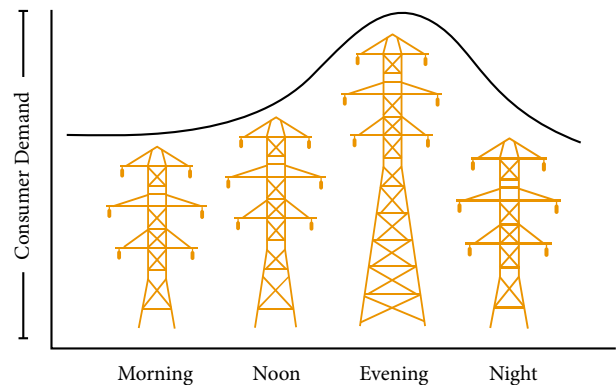
Participants are paid quarterly based on their agreed-to capacity, whether or not an event is called. In addition, they receive payments for each kilowatt of electric load they reduce during demand response events called by TVA. Learn more at [mlgw.com/EnerNOC](http://mlgw.com/EnerNOC).

## Reducing the Peak, Saving Energy

MLGW’s electric system reaches its peak in the mid-afternoon and early evening hours, all year-round. TVA’s system has two distinct peaks, which vary by season. In winter, TVA peaks between 4 a.m. and 10 a.m. In summer, between 1 p.m. and 7 p.m. All customers can help reduce the system peak through two types of activities: conservation and load shifting.

Conservation includes eliminating energy waste during peak hours through simple steps, such as turning off computers and office lights before leaving work and adjusting residential thermostats to the most efficient settings when you are away. Each kilowatt-hour of electricity you eliminate saves on your MLGW bill and helps reduce the community’s total system peak.

Load shifting includes delaying the time at which you perform energy-intensive activities until after peak hours have passed. Examples include using the delay setting on your dishwasher instead of starting the appliance immediately after dinner, or waiting until after 7 p.m. to run the clothes dryer on summer weeknights. The same activities are performed with the same outcomes—clean dishes and dry clothes—but during hours when TVA’s electricity generation costs are lower. For more ideas, visit [mlgw.com/peakalerts](http://mlgw.com/peakalerts).



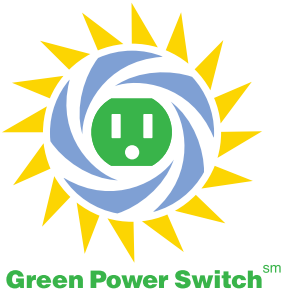
MLGW’s electric system reaches its peak in the mid-afternoon and early evening hours, all year-round.

# Renewable Energy

While traditional energy sources currently remain the predominant methods of supplying power, advancing technology continues to make alternative options increasingly affordable and efficient. MLGW promotes and facilitates several programs to encourage customers – both commercial and residential – to explore alternative, renewable energy sources.

## TVA Green Power Switch

Green Power Switch enables customers to support renewable power generation without spending money to install generation at their homes and businesses. Whether you have a shady lot, rent or simply don't wish to make a big investment, Green Power Switch is a great alternative! For as little as \$4 extra per month, you can make the “switch” and claim a portion of your electricity use is from clean, green power.



Launched almost 20 years ago, more than 1,100 local households and businesses participate in Green Power Switch. Their commitment results in 5.12 million kWh of renewable generation—enough to meet the annual electricity needs of 341 average Shelby County households. The environmental impact is equivalent to: recycling 21.7 million aluminum cans, or planting 1,423 acres of trees, or removing 474 cars from the roads for a full year.

Use the Green Power Purchase Calculator to see the impact that your participation will have, visit [tva.com/energy/valley-renewable-energy/green-switch](http://tva.com/energy/valley-renewable-energy/green-switch).



**Green Power Purchase Calculator**

How many blocks do you need?

To find out how many blocks of Green Power Switch you need to buy to match your own household's energy use with renewable energy, and how that will benefit the environment, fill in your monthly use of energy (in kilowatt-hours or dollars) and reach the indicator bar to see the effect of the percentage you choose and the cost. These numbers are derived from the EPA's Greenhouse Gas Equivalencies Calculator.\*

Monthly usage: 1200 kWh  
Monthly bill: 116.20 dollars

Percent you wish to match:

25% 50% 75% 100%

1 block = 100 kWh

Buying 2 blocks of Green Power Switch allows you to match 25% of your monthly energy use at a cost of only \$8.

**Energy Equivalent**

Each month, the renewable energy generation associated with your 2 block purchase will be roughly the carbon dioxide reduction equivalent of:

- Using 20 gallons of gasoline
- Driving 433 miles
- Burning 169 pounds of coal

\*EPA's Energy does not settle or verify carbon emissions claims or methodologies for calculating emissions related to homes.

It's easy... sign up now!

## These local businesses and organizations support Green Power Switch:

- ANF Architects
- Cloverleaf Animal Clinic
- Cooper Young Community Association
- Ensafe Inc.
- GG Lutherie
- Haizlip Firm
- Kele Inc.
- Memphis Light, Gas and Water
- New Tech Packaging
- River Inn at Harbor Town Landing
- Shelby Farms Park Conservancy
- T.O. Fuller and Shelby Forest state parks
- Superior Carriers
- The Daily News
- Village at Cypresswood

# Solar Farm in Millington Delivers Green Power for TVA

Millington became the site of Tennessee’s largest operating solar farm in 2019, when officials “flipped the switch” on a 68.5 MW dc (or 53 MW ac) solar array. The \$100 million project involves more than 500,000 solar panels on a single-axis tracking system. The solar farm occupies approximately 400 acres of land, including 72 acres leased from the US Department of the Navy. TVA buys the solar power under a 20-year Power Purchase Agreement with the solar developer. The massive system represents about 90% of solar generation installed in Shelby County since 2004. Learn more at [siliconranch.com/tennessees-largest-solar-farm-now-operational-at-millington-naval-facility/](http://siliconranch.com/tennessees-largest-solar-farm-now-operational-at-millington-naval-facility/)



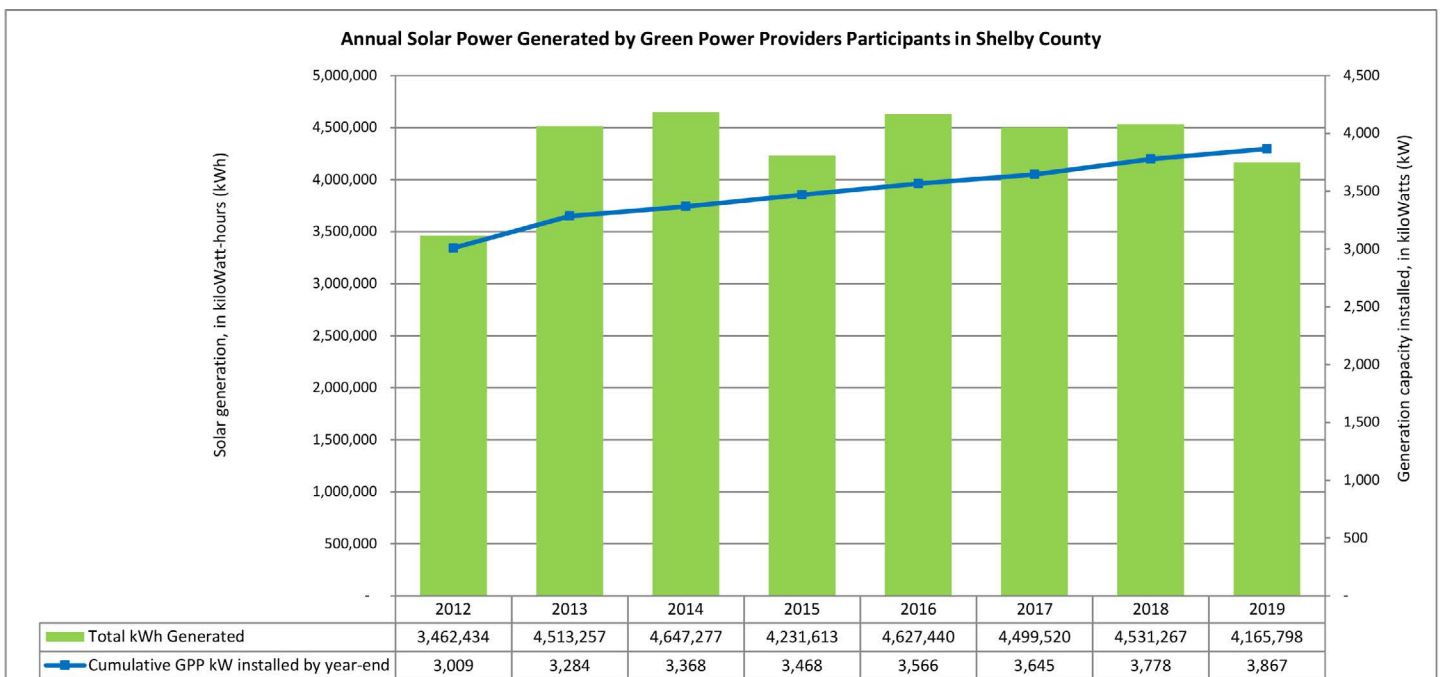
## Distributed Generation

Customer interest in renewable energy generation continues to grow, spurred by rapidly declining prices for solar equipment, a 30% federal tax credit and interest from companies that have set corporate sustainability goals.

Looking to understand the cost and payback for installing solar?

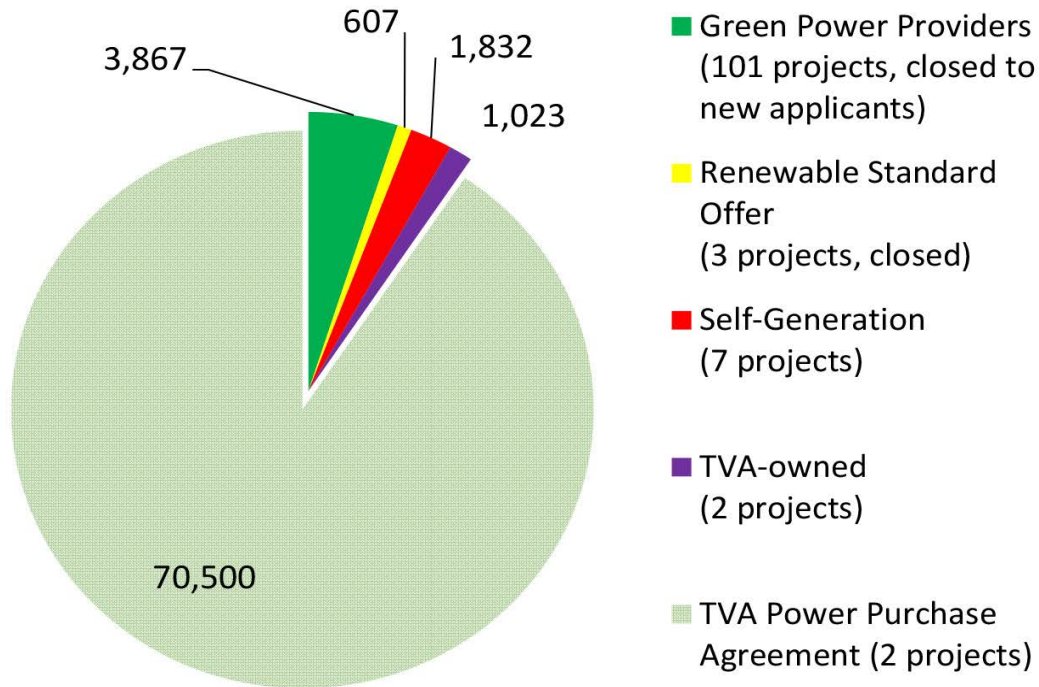
Go to the TVA solar calculator at: [tva.gov](http://tva.gov). It’s designed to show results for systems up to 50 kilowatts.

Using utility-specific rates and Tennessee Valley weather data, the calculator provides more accurate estimates than national solar calculators. It’s also a great way to fact-check installer information on output, costs and payback periods.





## Interconnected Generation Capacity in Shelby County (in kW DC) as of 12/31/2019



### MLGW Offers These Renewable Energy Options:

- Green Power Providers program allows customers to install small-scale generation at their homes and businesses. They can sell 100% of the output to TVA through 20-year agreements and receive generation credits on their MLGW bills. Eligible system sizes range from 500 watts (W) to 50 kilowatts (kW). MLGW has 101 customer projects enrolled in Green Power Providers as of Dec. 31, 2019, plus 15 applications in the pipeline as the program closed.
- Dispersed Power Production program allows customers to install onsite renewable generation and sell all or a part of their output to TVA at variable short-term avoided costs. TVA pays the incentives directly.
- Self-Generation option permits customers to generate power for use at their homes or businesses. Any power generated in excess of instantaneous consumption flows to the MLGW grid without financial benefit, so it's vital to size the generation capacity carefully. As of Dec. 31, 2019, five businesses and one residential customer create a portion of their own power while MLGW's electric grid provides the majority of their daily electricity needs.



# Responsible Energy in New Construction

The best way to be energy smart is to plan for efficiency and sustainability from the beginning. Whether building a new home or constructing a large industrial facility, customers can have a positive impact on the environment while saving themselves money in the long run.

## EcoBUILD

EcoBUILD is a voluntary green-building program that includes a set of construction standards that exceed the 2015 International Energy Conservation Code and common building practices.

### Benefits to EcoBUILD homeowners:

- Energy savings of 30% when compared to standard construction practices
- More comfortable indoor temperatures with less thermostat adjustments
- Better indoor air quality with fewer allergens from building materials used
- Potential higher resale value in the future
- Personal satisfaction by going green



Visit [mlgw.com/ecobuild](http://mlgw.com/ecobuild), or to apply for EcoBUILD certification, call 901-528-4188.

## Making Buildings Greener: LEED Incentive

Since 2009, the U.S. Green Building Council – Tennessee Chapter has honored businesses with a grant funded by MLGW. The grant encourages companies to use more energy-efficient and environmentally responsible construction practices. The grant is a companion to EcoBUILD, MLGW's residential green building program.

To apply for these funds, qualified project teams must submit an application – including the project's final LEED scorecard, detailed review and an educational document highlighting the project's sustainability attributes – to the USGBC Tennessee Chapter. Learn more at [usgbc.org](http://usgbc.org).

Read about previous local green building projects at [mlgw.com/leedincentive](http://mlgw.com/leedincentive).



# Energy Management within MLGW

Energy management and resource conservation opportunities within MLGW abound. By focusing on internal operations, the company is implementing projects that control operating costs, thereby helping to delay or minimize the need for utility rate increases. In addition, energy management enables MLGW to “lead by example,” showing customers that everyone has the potential to reduce energy waste.

## Alternative Fuel Vehicles

MLGW has been on-board with electric vehicle technologies via its corporate Plug-in Memphis website. Since 2006, MLGW has been actively involved with Plug-In Partners for the mass deployment of plug-in electric and hybrid electric vehicles. Through electric vehicle purchases and a growing fuel infrastructure, the company continues to support alternative fuel transportation.

- Flex-fuel: **512** on-road, light and medium duty vehicles which use unleaded gas or ethanol fuel
- CNG: **119** on-road, half-ton and three-quarter-ton trucks
- Hybrid: **21** vehicles (Toyota Prius, Ford Escape & Fusion) powered by unleaded gas and lithium batteries
- Plug-in Electric: **Four** Nissan Leaf all-electric vehicles
- Plug-in Hybrid Electric: **One** Odyne on-road, heavy duty bucket truck powered by diesel and lithium batteries and used in electric line repairs and installations

## Building Automation and Insight

Insight into how facilities use energy can help identify efficiency opportunities. At MLGW, control systems have been installed to automate heating, ventilation and air conditioning systems in order to identify and resolve operations issues and reduce energy usage. Building automated systems are installed at the following buildings: Administration Building, Netters Business Operations Center, North Service Center, Building #8, Electric & Systems Operations, MLGW University, Water Laboratory, North Community Office (Air Handlers), and Beale Street Landing.

MLGW also utilizes services to view the metering data graphically and to gain insight into how and when facilities use energy. Meter Intelligence and Energy Star’s Portfolio Manager assist in identifying operational efficiencies related to energy usage in the buildings.

## Energy Star Partner

MLGW has been an Energy Star partner since 2004, and provides information to employees and customers about energy-efficient products and resources via [mlgw.com](http://mlgw.com). There, customers can obtain up-to-date information about efficient home building, energy saving equipment and appliances, facility energy performance and resource conservation tools.

MLGW hosts and participates in many community outreach events held during the year throughout Memphis and Shelby County. The company promotes its Energy Star partnership by making available downloadable information to customers and promoting energy efficiency on the company’s Energy Star corporate website. These venues allow the company to lead by example in educating the community on how to use its resources.

# Tracking, Master Planning, Energy Audits, Demand Response

**Tracking:** Data from over 100 electric, gas and water meters that serve MLGW facilities are tracked in order to identify the impact of facility upgrades, trends in usage, operations adjustments and account anomalies.

**Planning:** Long range planning provides a framework for managing existing resources and expanding infrastructure in a way that allows MLGW to make informed and cost-effective decisions. MLGW actively plans for the anticipated needs of its physical environment through the following:



- The MLGW Facilities Master Plan is developed on an annual basis in order to provide a roadmap of capital improvements to MLGW's facilities. Based on a 10-year horizon, the plan details existing facilities, new facility developments and equipment upgrade installations in the **1.9 million-plus square feet** of buildings.
- The Equipment Replacement Database tracks envelope, mechanical/plumbing, electrical, new building additions and structural projects completed in each facility. The database aids in the planning process in identifying when upgrades are needed for equipment and space needs.
- The Facility Seismic Mitigation planning is done in the areas of monitoring, screening, strengthening, and containment. Facilities are monitored by seismograph equipment for earthquake events. MLGW's buildings have been screened and inventoried for potential earthquake hazards. Also, HVAC and electrical equipment has been anchored to prevent damage during seismic events. Finally, seismic valves have been installed at critical facilities to prevent natural gas eruptions during earthquake occurrences.
- Compliance planning in facilities is necessary in order to meet the American Disabilities Act requirements. MLGW has planned and implemented upgrades to its publicly accessible facilities. Improvements include entrance accessibility, restroom access accommodations, accessible parking spaces, etc.

**Energy audits:** Building tune-ups help to identify low-hanging fruit opportunities such as programming building automation controls to reduce energy during times facilities are vacant. Cost effective technologies are identified for application such as controls, LED lighting deployments in facilities, efficient boiler equipment upgrades, variable air volume, on-demand ventilation, system controls, and touchless sensor technologies.

**Demand response** programs are popular among utilities and their customers. Since 2011, MLGW has participated in TVA's demand response program administrated by Enel X (formerly EnerNOC). To date, seven MLGW facilities are enrolled into the program including:

- **David F. Hansen Administration**
- **James L. Netters Business Operations Center**
- **Joyce M. Blackmon MLGW University**
- **Larry Papasan Electric and Systems Operations**
- **North Service Center Building #8**
- **Allen Water Pumping Station**
- **Shaw Water Pumping station**

As of 2019, MLGW has received \$159,434.79 in energy and capacity payments from the program.

# Energy Efficiency Equipment Upgrade and Operations

Sustainable energy efficient upgrades made through facility improvements at various locations include: Re-Cover/Replace Roofs & Air Conditioning Units, Building Exterior Upgrades, HVAC & Plumbing Upgrades-Variou Locations.

## **MLGW headquarters - David F. Hansen Administration Building**

*Previous improvements:* New fire pump (design); Limestone facade rehabilitation; Door weatherizations; T-8 lighting retrofit; Generator upgrade; Elevator upgrades; Chiller and cooling tower retrofit/rebuild; HVAC & controls upgrades; Chilled water pump replacements; Irrigation system upgrade (installation of moisture sensors to reduce water usage).

## **James L. Netters Business Operations Center**

*Previous improvements:* ADA Compliance upgrades; Protective window film; Elevator controls to reduce lighting and fan energy usage when the cab is not in use; Wireless occupancy controls on lighting; Photocell installation to turn off parking lot and exterior building lighting; Irrigation system upgrade (installation of moisture sensors to reduce water usage); Boiler upgrades.

## **Service Centers**

*Previous improvements:* Roof replacements; T-8 and T-5 lighting retrofits with occupancy sensors; boiler; Emergency generator upgrades; HVAC upgrades; Canopy upgrades.

## **Community Offices**

*Previous improvements:* Remodeling upgrades and ADA compliance; Roof replacements; T-8 lighting retrofits with occupancy sensors; HVAC upgrades (including BAS—North office); Garage LED lighting upgrade (Beale Street Landing Garage); Elevator system modernization; Chilled water pump replacements.

## **Larry Papasan Electric & Systems Operations**

*Previous improvements:* Roof replacements; T-8 and T-5 lighting retrofits; HVAC upgrades (including BAS); Boiler replacement; Uninterrupted Power Supply (UPS) and Generator upgrade.

## **Electric Substations**

*Previous improvements:* Roof upgrades; Replaced inefficient analog thermostats with programmable models with lockable capability; Energy efficient HVAC installations.

## **Gas Gate Stations**

*Previous improvements:* Roof upgrades.

## **Water Pumping Stations**

*Previous improvements:* Roof replacements; Elevator modernization; HVAC upgrades; Lighting retrofits; Generator upgrades; Water Lab upgrades.

# Energy Innovation

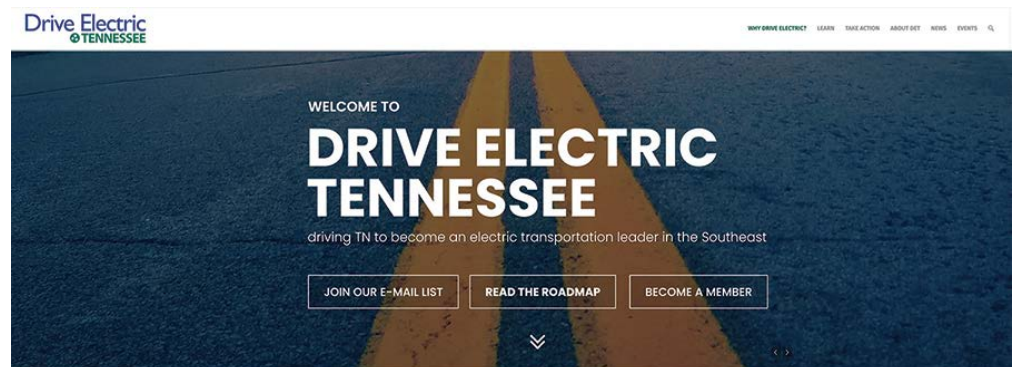
MLGW is continually working on innovative ways to improve our Energy Efficiency and help our customers with preserving the Environment for future generations.

## APPA Nissan Leaf rebate

MLGW promoted an instant rebate offer on 2019 Nissan Leaf models, available for several months in 2019. The rebate, valued between \$2,500 and \$3,500 depending on model, was funded by Nissan and available to customers and employees of public power utilities like MLGW. TVA and the American Public Power Association (APPA) helped coordinate the rebate with Nissan. Information on local purchases has not been shared, but we heard from a few MLGW customers who appreciated the opportunity to save!

## Drive Electric Tennessee

MLGW participated with a large coalition of representatives from State of Tennessee agencies, utilities, universities, electric vehicle manufacturers, businesses and advocacy groups in 2018 and 2019 in the development of the Drive Electric Tennessee Roadmap, which was released in January



2019. The Roadmap identifies projects and initiatives for local stakeholder implementation, with the goal of reaching 200,000 plug-in EVs in Tennessee by 2028 (up from about 5,000 plug-in EVs in 2017). MLGW will work with Drive Electric Tennessee partners in 2020 to help achieve local EV adoption through participation on the awareness and infrastructure sub-committees.

Visit [energyright.com/electric-vehicles/](https://energyright.com/electric-vehicles/) and [driveelectrictn.org/](https://driveelectrictn.org/) to read the Roadmap, learn about the benefits of EVs, find charging stations, compare operating costs to gasoline-fueled vehicles, see EV driver testimonies and more.

## Liquefied Natural Gas and Compressed Natural Gas



In 2019, MLGW saw \$4.2 million in liquefied natural gas sales revenue. By generating a nontraditional revenue fuel source, it helps keep our utility rates low. On average, MLGW sells more than a half million gallons of LNG per month.

LNG is natural gas that has been liquefied and chilled at extremely low temperatures for easier transport and storage. United Parcel Service ranks as MLGW's top LNG customer and buys the alternative fuel for its over-the-road delivery fleet. Using LNG to fuel vehicles reduces greenhouse gas emissions by 30 to 40%.

MLGW also uses LNG to supplement its natural gas supplies. If temperatures drop to subfreezing conditions and demand for gas spikes in Memphis, MLGW can tap into its **12 million-gallon** LNG reserve tank.

In addition to LNG, MLGW sells **100% renewable** Compressed Natural Gas (CNG) at its two public gas stations. Regional haulers, buses, taxis and garbage and delivery trucks use CNG. CNG **reduces greenhouse gas emissions by 20 to 30% less** than diesel. In 2019, MLGW distributed over **180,000** gasoline gallon equivalent (GGEs) of CNG.



## Renewable Natural Gas

At the Republic Services North Shelby Landfill in Millington, an ongoing partnership between MLGW and Aria Energy is turning discarded waste into an energy source. Over time as buried trash decays, methane gas and carbon dioxide builds up underground. Aria Energy harnesses and converts the methane gas into a renewable energy. MLGW provides the pipeline to transport the gas to customers.

South Shelby RNG, LLC, a subsidiary of Aria Energy, is developing the South Shelby Landfill into another Renewable Natural Gas source. The projected revenue in the form of electric sales and gas transportation from this project to MLGW is nearly **\$2.9 million dollars** annually.

# 2019 Recycling and Reuse

Recycling and reuse of resources is just one way MLGW works to protect our environment and continue its efforts in reducing or eliminating harmful emissions and gases.

## Recycling and Reuse Efforts

**Paper:** In 2019, MLGW recycled 313,964 pounds of paper. It is the equivalent of reducing 869 metric tons of CO<sub>2</sub>e – or eliminating the greenhouse gases from 174 cars driven in a year – or reducing carbon dioxide emissions from 143 homes' electricity use in a year.

**Printer ink and toner cartridges:** 1,605 pounds were reused and recycled with MLGW's office supply vendor and cartridge recycler Guy Brown.



## Materials Exchange

Back in 2015, MLGW initiated an internal materials exchange program which promotes the beneficial reuse of material resources at MLGW. What one department might classify as surplus or obsolete may be reusable in another department. Notices of availability of office products, construction materials and project-related items in which employees can use in their daily work are posted in the company's Weekly Bulletin email. As of 2019, exchanges diverted 22 pounds of material away from the landfill into useful purposes.

## Green & Sustainable Grounds

**Erosion control:** MLGW maintains its grounds through care and sustainable practices. Erosion control prevents the development of ruts and washed-out areas on the grounds that are typically caused by precipitation, wind or vehicles. Eroded areas are refilled with reused soil, and silt fences are installed on banks or berms before trees are planted. These preventative measures insure that MLGW's properties are well maintained.

**Sustainable plant material and maintenance practices:** The plant material selected to array the grounds have low moisture requirements and in some cases are perennials which do not require replanting every year.

Remaining green waste is recycled through a local mulch yard turning the green waste into compost or mulch.

Turf areas are planted with grasses that will thrive in this region such as Zoysia and Bermuda. Mowers used to groom the turf are equipped with mulching kits and blades that recycle turf and leaves back into the soil.

Integrated pest management practices are also used to treat plant material only when necessary. Pests are monitored and identified accurately, so that appropriate control decisions can be made in conjunction with action thresholds. MLGW also uses the newest and safest chemical technology.

**Sustainable products:** MLGW uses recycled paper products to clean and stock its restroom and kitchen areas. Environment-friendly products are also used to remove ice from hardscape areas that are located on the company's grounds.

## Employee Awareness

MLGW educates employees on the importance of saving resources while at work by promoting green campaigns such as: Fix Water Leaks Month (March), Earth Day (April), Energy Awareness Month (October) and America Recycles Day (November). Throughout the year, these initiatives provide tips on how to wisely use resources at MLGW facilities. Also, we remind our workers on how to help the company save energy during after-hours and holidays.



# Diversity in Business

MLGW recognizes the power of diversity and the vast resource a diverse pool of suppliers and contractors offers businesses. The Supplier Diversity program demonstrates MLGW's intentional focus on creating opportunities for demographics that have been traditionally underrepresented in business.

## Supplier Diversity

MLGW's Supplier Diversity department's mission is to foster economic parity within the Memphis and Shelby County community. This program gives maximum practical opportunities to certified businesses as a partner in the buyer-seller relationship with MLGW.

MLGW bases its diversity spending on independent certification that businesses are at least 51 percent owned, controlled, operated and managed by a person or persons who represent one of the three business classifications outlined in the program definition.

In 2019, MLGW reported a total of **\$142 million** in year-end spending with roughly **\$47 million (34%)** going to minority, women and locally-owned small businesses.

Broken down, MLGW spent:

- **\$23 million – or 17% – with minority-owned business enterprises**
- **\$5 million – or 4% – with women-owned business enterprises**
- **\$18 million – or 13% – with locally-owned business enterprises**



## Vendor Fair

When MLGW hosts its Vendor Fair, we give guidance to business owners who may be unfamiliar with our bidding process. We invite representatives of local small businesses and minority- and women-owned enterprises to attend and learn how to do business with us. The business owners meet one-on-one with our project managers and purchasing professionals. The Vendor Fair allows small business owners to understand the Division's utility needs and compete for a part of what we buy during the year.

## Sheltered Market

We want to help local small businesses grow. That is why five years ago in 2014, we rolled out the Sheltered Market program. The race and gender neutral program "shelters" any purchase under \$100,000 by offering three or more certified local small businesses the chance to bid on our products or services.

In 2019, we spent **\$13 million (10% of our total procurement spend)** with local small businesses. Programs such as our Sheltered Market are essential in promoting a healthy local economy.

# Community Education

At MLGW, we believe that a sound educational system is the foundation for a healthy community. Therefore, we offer a number of programs to support students, teachers and the community at large in being safe and successful. For more information about these programs, call 901-528-4820.

## Community Conservation Days

Our Residential Services department hosts a number of conservation education events throughout Memphis and Shelby County. Our staff travels to all of our MLGW community offices, libraries, museums, colleges and community centers. They provide our customers with energy efficiency kits as well as offer tips on how to save energy.

- 12 Conservation Days in 2019
- 19,226 energy kits distributed

MLGW employees knocked on doors in the Lester and Orange Mound Communities sharing energy efficiency tips and passing out energy kits during the two Community Service Days.

## EnergySmart Memphis

MLGW, in partnership with TVA, provides free, 90-minute EnergySmart Memphis workshops. Trainers discuss common household energy problems, lead hands-on demonstration of weatherization measures and review basic strategies in managing energy costs.



Attendees receive energy kits with compact fluorescent bulbs, a caulk gun, caulking, plastic window covering, gasket insulator and other energy-saving items. The kit is valued at \$100. Once all of the items are installed, customers can potentially save up to 116 kWh annually.

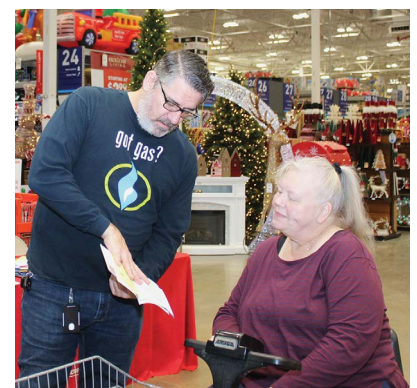
- 21 EnergySmart classes in 2019
- 2,019 energy kits distributed

Collectively, our energy kit recipients are saving a potential of 801,000 kWh of electricity.

## Gas Safety Days

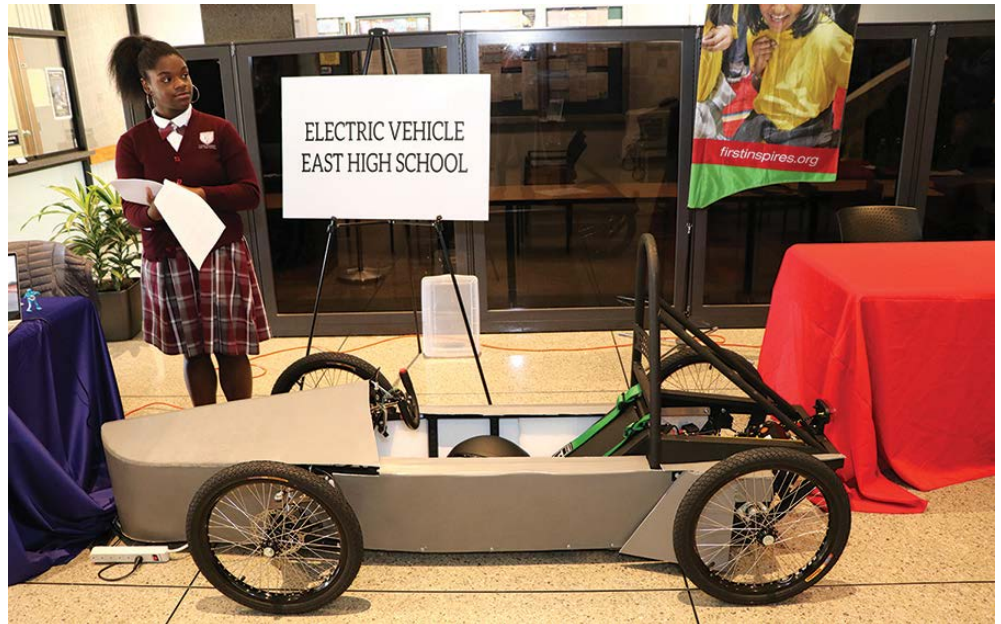
At least once or twice annually, Gas Engineering staffers and other MLGW employees volunteer to set up informational tables at local Lowe's Home Improvement stores to educate the public about natural gas safety. They talk with customers about why it's important to "Call 811 Before You Dig." If customers are hiring someone to dig, excavate or landscape, the contractor also needs to call 811 three days before starting to have underground utilities marked to avoid accidents or explosions.

The volunteers also offer information about what to do if you smell a gas leak, what visual signs indicate an underground gas leak, gas appliance safety and more. With a number of recent natural gas explosions around the country – some involving fatalities – this is important information to share with residents of Memphis and Shelby County.



# Robotics Showcase

2019 marked the fourth year for the Robotics Showcase sponsored by MLGW's Junior Engineer/Professional Engineer (JEPE) program and TVA, which partnered together to promote STEM education and involvement among the next generation of public power professionals. Sixteen participating teams unleashed their creations to walk, crawl, carry loads or throw objects around the MLGW building lobby.



## A-Blazing Race...to the Finish Line!



The A-Blazing Race promotes MLGW's interest in solar energy and engages youth in grades six through twelve in the design and construction of model solar cars while also introducing children to different engineering-related professions. The object of the race is to design and build a vehicle that is powered strictly by solar power to compete in races with other similar cars. Students also compete in a design competition. **Thirty-eight teams**, representing **24 schools** competed to see whose solar cars were the fastest, who came up with the best notebook and the best design work for their projects.

### A-Blazing Race 2019 WINNERS:

#### Middle School

**Best Notebook:** Kate Bond Middle School

**Best Design:** Arlington Middle School

**Speed:** 1st Place- Kate Bond Middle School; 2nd Place- Snowden Middle School; and 3rd Place- Arlington Middle School

#### High School

**Best Notebook:** Lausanne Collegiate School

**Best Design:** Overton High School

**Speed:** 1st Place- East T-STEM Academy; 2nd Place- Houston High School; and 3rd Place- White Station High School

# Annual MLGW Art Poster Contest

Each year, MLGW holds an annual poster contest for students throughout Shelby County. In 2019, we focused on protection of the aquifer with the introduction of a new *Power League Super Hero: Water Mane*. The winners and their art teachers won \$150 gift cards to The Art Center.

**K-2<sup>nd</sup> category winning student:**

Wynn Maceri, 2nd Grade

Teacher: Lauren McGeorge

School: Lamplighter Montessori

**3-5<sup>th</sup> category winning student:**

Erin Gray, Jr. 4th Grade

Teacher: Megan Travis-Carr

School: Shelby Oaks Elementary

**6-8<sup>th</sup> category winning student:**

La'Ron Robinson, 6th Grade

Teacher: Jasmine Hicks

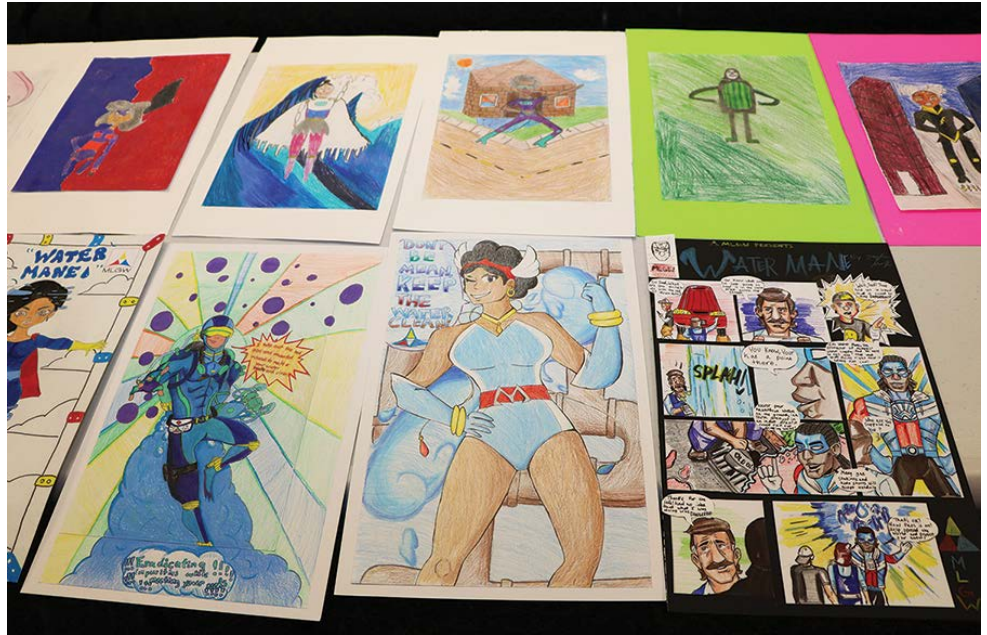
School: Grizzlies Preparatory  
Charter School

**9-12<sup>th</sup> category winning student:**

Tierra Dillihunt, 12th Grade

Teacher: Ronald Smith

School: Whitehaven High School



# Terminator, Conservation Girl and Energy Vampire



The Terminator, Conservation Girl and the Energy Vampire entertain while educating our youngest energy users. The fun and colorful Terminator bucket truck promotes safe energy use at home. At other events, a flashy SUV with energy tips acts as a backdrop as Conservation Girl's ride as she battles the Energy Vampire. All the characters play important roles as energy superheroes and/or villains during school events, career day outings as well as local holiday community parades. In 2019, our employees participated in 16 Terminator, Conservation Girl or Energy Vampire appearances and two holiday parades.

# Community Assistance

Many in our community face challenges that can make meeting basic needs difficult. MLGW provides several programs to assist those who may need a helping hand. Whether one-time events or chronic financial troubles, we are determined to help community members overcome their obstacles.

## On Track

On Track helps residential customers with limited incomes manage debt and pay off their utility bills over a period of time. The program focuses on weatherization, financial management and social services. Among the 464 applications for the On Track program, 228 customers enrolled. Our On Track team held a dozen orientations to help our customers get back “On Track” with their bills through energy efficiency and financial management education and access to additional social service resources. On Track also provided public and On Track customers with Financial Therapy, a half day financial conference with workshops on topics such as couponing, cutting utility costs and holiday budgeting.

## Plus-1

Founded in 1982, Plus-1 is a partnership with MIFA and MLGW. The program provides one-time assistance for individuals and families hit with an unexpected financial crisis like the loss of income, a fire or theft. The program is not an ongoing source of assistance. Customers can choose to add a dollar or more to their monthly bill to support families in need. In 2019, \$522,479 was contributed to help our customers. We served a total of 600 households.



## MLGW Volunteer Outreach

Throughout the year MLGW represents our community. MLGW employees and volunteers participated in:

- 85-plus community, school and civic speaking engagements
- 120 school events
- 2 water tours
- 2 Holiday parades
- Adopt-a-School
- Other activities included: Senior Bingo and School Hygiene Campaign

Senior Bingo was held at four different Senior Centers in the MLGW customer area and was designed to educate senior customers on utility assistance programs, energy efficiency and utility lingo. The game is played like bingo, but with utility terminology. Customers received MLGW branded gifts when they got BINGO!

The School Hygiene Campaign was held in the fall of 2019, and involved collecting soap, hand sanitizer, antibacterial wipes and facial tissue for Craigmont Middle School. Boxes were placed in the community offices, MLGW University and the Administration Building.

# Share the Pennies Home Weatherization Program

Share the Pennies is a voluntary program funded by participating customers whose utility bills are rounded up to the next whole dollar amount. The difference is then donated to the program to fund weatherization grants for low-income homeowners. Weatherization repairs include attic insulation, window replacement, gas and water leak repairs, HVAC and water heater replacements and more.

In 2019, over **\$1.2 million** was donated and with additional funding from TVA, 259 homes were completed.

To qualify for a grant, applicants must own and live in their home, meet income guidelines (based on 200% of the Federal Poverty Guideline) and meet other eligibility requirements. For a full list of eligibility requirements and eligible repairs, please visit [mifa.org/sharethepennies](http://mifa.org/sharethepennies).



## Energy Doctor and Rental Ordinance

Whether you own your home or rent one, MLGW can help. We offer free energy audits for both homeowners and renters. Homeowners can go to [mlgw.com/energydoctor](http://mlgw.com/energydoctor). Renters can go to [mlgw.com/rentalrescue](http://mlgw.com/rentalrescue).

The Memphis City Council adopted the rental housing energy efficiency ordinance in 2009. It allows MLGW to inspect rental properties that have been identified for excessive energy usage. MLGW Residential Service Technicians look for energy-wasting issues such as holes in exterior walls and roofs, leaks, insulation problems and non-functional heating or cooling units.

We ensure that minimum energy-efficiency standards are met by the landlord. If necessary, MLGW can take the landlord to Environmental Court if issues are not addressed. Since its inception, all landlords have complied before any issue was taken to court. To schedule a home audit, go online or call and leave a message at 322-5757.

In 2019, there were 531 free home energy audit completed for customers.

# Volunteering and Giving

By working together, MLGW employees are always eager to give back to the communities we serve. Their devotion shows by the number of hours they log after work and on weekends as well as the money raised for a variety of local organizations.

## Employee Contributions Up for United Way

The MLGW United Way team presented a check during a February Board meeting for the total employee contributions of the 2019 MLGW United Way fundraising campaign. The fundraiser was a success, with team members going above and beyond to meet the goal. MLGW employee giving surpassed the goal of \$665,000 for a total of \$670,860.



## MLGW Raises More than \$43,000 for Mid-South Food Bank



MLGW employee donations and fundraising activities hit a new all-time high for the Mid-South Food Bank. For 2019, MLGW employees raised \$43,149 – more than any other company in the Memphis area.

In addition to garnering first place among large corporations, MLGW's contribution totaled 52% of the \$82,773 that was collected during the 2019 food drive.



MLGW

SERVING YOU IS  
WHAT WE DO

