OFFICE OF ENERGY PROGRAMS
PY 2024 ANNUAL REPORT

http://www.tn.gov/environment/energy

TABLE OF CONTENTS

OFFICE OF ENERGY PROGRAMS

The Office of Energy Programs provides funding, financing, technical assistance, education, and outreach opportunities for grid resilience, energy in transportation (e.g., alternative fuels and sustainable transportation options), advanced nuclear, energy efficiency, renewable energy, utility management for State-owned and managed facilities, and energy security planning, preparedness, and response.

OEP is comprised of two sections: the State Energy Office (SEO) and the State Facility Utility Management Section (SFUM). Through its activities, OEP promotes the efficient, effective use of energy to enhance the environmental and economic health of the state. Learn more about OEP at http://www.tn.gov/environment/energy.

ANNUAL REPORT REQUIREMENTS

Tenn. Code Ann. §§ 4-3-510(9) and 4-3-1012(b)(5) require TDEC OEP to submit annual reports to the Governor, the Speakers of the Senate and House of Representatives, and the Chair of the Senate and House Committees on government operations, energy, and conservation, or their successor committees. TDEC OEP's Program Year runs concurrent with the Federal Fiscal year; thus, this combined report covers the period from October 1, 2023, through September 30, 2024.

TENNESSEE'S STATE ENERGY OFFICE

TDEC OEP serves as the Governor-designated SEO for the State of Tennessee. The SEO is tasked with developing and overseeing energy-related programs and initiatives that promote a healthy environment and a stronger economy. The SEO's activities from the Program Year fall into six main areas of focus: stakeholder collaboration and outreach; energy security planning, preparedness, and response; K-12 energy education; energy in transportation; and the leveraging of energy-related funding and financing opportunities (e.g., opportunities funded under the Infrastructure Investment and Jobs Act and the Inflation Reduction Act).

The SEO receives annual formula funding from the U.S. Department of Energy (DOE) State Energy Program (SEP). U.S. DOE's SEP provides funding and technical assistance to states, territories, and the District of Columbia to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste.

Stakeholder Collaboration and Outreach

Communications

OEP curates and distributes two monthly newsletters, the Energy Edition and the Transportation Edition. These monthly newsletters are disseminated to a listserv of over 4,800 stakeholders and serve as the primary vehicle for OEP to announce timely news items, upcoming events, funding opportunities, and new resources. Additionally, OEP develops and maintains web content and continually improves the functionality of its website to create a better user experience. Visit OEP's website at http://www.tn.gov/environment/energy.

OEP also works with communications partners to share energy and energy in transportation content via social media, reaching individuals that may not already be subscribed to OEP's mailing list. One partner, TDEC Communications, manages TDEC's X and Facebook accounts (@TNEnvironment). The accounts have over 4,800 and 13,000 followers, respectively. Another partner, Tennessee Clean Fuels, maintains a social media presence on X, Facebook, and Instagram (@TNCleanFuels), reaching approximately 4,200 additional followers.

In accordance with Tenn. Code Ann. §4-3-501(3), OEP is responsible for providing "information and educational programs for local governmental units and the general public, including the operation of a toll-free energy hotline." As such, OEP maintains an updated overview of its programs on the OEP website and provides technical assistance to internal and external customers by responding to energy-related inquiries received via email or through OEP's energy hotline. During the Program Year, OEP handled over 340 requests from the residential, government, utility, commercial, industrial, institutional, and other sectors for energy-related information and resources. These general requests for technical assistance are in addition to inquiries that OEP received regarding its specific programs and activities.

Interagency and Nonprofit Collaboration

A key component of OEP's outreach strategy is the multi-faceted work from cooperation with external partners and organizations. OEP collaborates with various stakeholders to support the execution of targeted outreach and improved programs across the residential, commercial, industrial, and public energy sectors. Key activities during the Program Year include the following:

- OEP supported and cross-promoted the work of the Tennessee Advanced Energy Business Council (TAEBC), which champions advanced energy as a job creation and economic development strategy. OEP shared information with its stakeholders on TAEBC's ongoing events, resources, and programming, helping draw attention to TAEBC and its mission in Tennessee.
- OEP continued to support the Technology Enabled Advanced Mobility (TEAM) TN alliance, led by the University of Tennessee, Knoxville. TEAM TN is a partnership with the National Science Foundation and is an alliance of academics, industry, and technical societies that seeks to place Tennessee at the forefront of transportation electrification and digitization. OEP participated in meetings and events hosted by TEAM TN and shared information with stakeholders on the alliance's ongoing events, resources, and programming.
- OEP supported TDEC's Division of Air Pollution Control and Office of Policy and Planning with the development of the State's Priority Climate Action Plan, the Tennessee Volunteer Emissions Reduction Strategy which was funded by the U.S. Environmental Protection Agency's (EPA's) Climate Pollution Reduction Planning Grant. https://www.tn.gov/environment/policy/tvers.html

OEP also participated in and supported collaborative applications to State and federal funding opportunities. With OEP's involvement, these applications leveraged stakeholder partners, diverse cost-share commitments, and the state's strong research community to bring new, innovative energy programs to Tennessee.

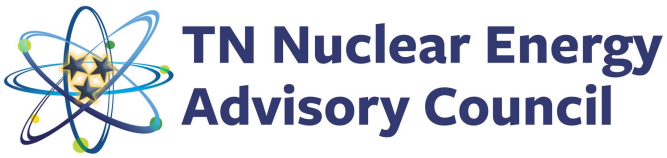
Examples of application support include:

- OEP supported the TDEC Office of Sustainable Practices (OSP) and the Tennessee Department of Economic and Community Development (TNECD) with an application to the U.S. DOE Funding Opportunity for Manufacturing Conversion Grants for Electrified Vehicles (EVs): State Partnerships for Small- and Medium-Sized Manufacturers (SMMs). Tennessee was one of the few states allocated formula funding under the program. TDEC OSP was awarded $5.5 million for the program, which will facilitate the retooling and retraining of SMMs to align with the evolving demands of the automotive manufacturing sector. TDEC OSP and its advisory committee of TDEC OEP, TNECD, the Tennessee Manufacturing Extension Partnership, and the Tennessee Valley Authority (TVA) will survey eligible SMMs to assess their readiness and capacity for transitioning to EV production and will develop program selection criteria, issue a solicitation, and select projects to receive funding.
- OEP supported OSP with an application to the U.S. DOE for the Smart Manufacturing and Recycling Tactics for States (SMART) Funding Opportunity, under Area of Interest 1: State Manufacturing Leadership Program. The project, awarded a total of just over $1.7 million, will advance training and workforce development centered around smart manufacturing, while also providing smart manufacturing and high-performance computing (HPC) related on-site technical assistance to SMMs in partnership with Tennessee higher education institutions and Oak Ridge National Laboratory (ORNL).
- OEP also supported the successful application of OSP to the U.S. DOE for the SMART Funding Opportunity, under Area of Interest 2: State and Local Battery Collection, Recycling, and Reprocessing Program, in collaboration with TDEC's Division of Solid Waste Management, Materials Management Program (MMP) for an award of over $363,000. The project will provide no-cost battery collection options for Tennessee counties participating in TDEC MMP-hosted Household Hazardous Waste Collection Events and free, public-facing battery collection receptacles to local government and community facilities (upon request). Additionally, OSP will engage in work to develop battery recycling and safe disposal educational resources branded as BatteryWiseTN.
- OEP supported a successful application to TNECD under the Transportation Network Growth Opportunity (TNGO) initiative. Under this award, the Middle-West Tennessee Clean Fuels Coalition will receive $500,000, which will allow students and faculty from Tennessee State University and Vanderbilt University to participate alongside Oak Ridge National Laboratory on a project titled, "Demonstrating Rapidly Deployable Artificial Intelligence (AI) Based Adaptive Signal Timing Optimization." The project will seek to achieve a 20% improvement in mobility efficiency with optimized traffic signal timing at 100+ intersections in Nashville. The project will seek to achieve a 20% improvement in mobility efficiency with optimized traffic signal timing at 100+ intersections in Nashville.
- OEP supported the Nashville Electric Service (NES) and the City of Nashville and Davidson County in applying to U.S. DOE's Energy to Communities: In-Depth Technical Partnerships opportunity. NES was awarded $500,000 in direct financial assistance as well as up to $3.5 million in technical assistance from ORNL for the Nashville Area Sustainable Human-centered Grid Modernization Strategy (NASH-GMS) project, which will create a digital twin of the NES distribution network. The NASH-GMS project will help create models that better enable development on the region's grid modernization strategy, as digital twins provide advanced modeling and insights that allow the project team to understand, prepare, plan, and integrate resources, investing in the NES distribution system. These data-driven insights can help capture key grid considerations, including where and how customer loads are changing, where EV penetration is greatest, and where non-wire alternatives could be economically advantageous.

Boards, Councils, and Working Groups

OEP engages with stakeholders from federal, state, and local government, the utility sector, as well as with other SEOs and non-governmental organizations (NGOs) on topics related to strategic energy planning:

- The OEP Director served as the Governor's designee to the State Energy Policy Council, the TDEC Commissioner's designee to the Energy Efficient Schools Council, the SEO representative on the Tennessee Housing Development Agency's Energy Efficiency and Weatherization Advisory Board, and the TDEC representative for the TVA Valley Pathways Working Group.
- The OEP Deputy Director of Programs, Innovation and Transportation, and Communications served as the Governor's designee on the TVA Regional Energy Resource Council, a TDEC representative on the TVA Connected Communities Steering Committee, and as the southeast regional representative for SEOs regarding National Electric Vehicle Infrastructure (NEVI) Program implementation.
- The Senior Energy Programs Administrator and Primary Emergency Services Coordinator participated in the TVA Utility of the Future Information Exchange (UF-IX) Working Group, served as a TDEC representative in the Integrated Resource Plan Stakeholder Working Group, and served as the TDEC Commissioner-appointed energy sector representative in the annual TN Mapping Advisory Committee meeting.



Tennessee Nuclear Energy Advisory Council

In May 2023, Gov. Bill Lee established the Tennessee Nuclear Energy Advisory Council (TNEAC) through Executive Order 101, tasking the TNEAC with advancing Tennessee's nuclear leadership and expanding its nuclear energy ecosystem.

The TNEAC consisted of 22 members from industry, higher education, workforce development, and government, was led by Chairman David W. Salyers, TDEC Commissioner, and was administratively attached to TDEC.

During the Program Year, OEP, in conjunction with other TDEC divisions and offices (e.g., the Office of Policy and Planning, Division of Radiological Health, and Bureau of Environment Leadership), assisted with the convening of the TNEAC, facilitation of TNEAC meetings, TNEAC correspondence, related stakeholder outreach and engagement, research, and drafting, finalization, and dissemination of deliverables, such as the TNEAC's final report and recommendations.

TNEAC member photo.

Conferences, Workshops, Presentations, and Speaking Engagements

OEP staff presented at various workshops and conferences to promote programs, funding and technical assistance opportunities, initiatives, and U.S. DOE efforts. Examples include the Tennessee Environmental Network Show of the South Conference; Tennessee Chamber of Commerce & Industry and the Tennessee Recycling Coalition's Tennessee Sustainability Conference; ORNL-hosted Smoky Mountains Mobility Conference; University of Tennessee Baker School's Southeast Energy Policy Forum; TVA Connected Communities Conference; and several other state and regional convenings. OEP also sponsored and assisted in planning and promoting the Tennessee Valley Solar + Storage Conference, hosted by the state chapter of the Solar Energy Industries Association, TenneSEIA.

National Association of State Energy Officials (NASEO) Engagement

NASEO is the only national non-profit association for the governor-designated energy officials from each of the 56 states and territories. Formed by the states in 1986, NASEO facilitates peer learning among state energy officials, serves as a resource for and about SEOs, and advocates for the interests of SEOs to Congress and federal agencies. Throughout the Program Year, OEP supported NASEO through membership dues and participation on the NASEO Board and several committees:

- The OEP Director served as Vice Chair for the Executive Committee of the NASEO Board of Directors, and as a Co-chair of the NASEO and National Association of Regulatory Utility Commissioners *Advanced Nuclear States Collaborative*.
- The OEP Senior Energy Programs Administrator for Energy Security / Critical Infrastructure served as Co-Chair of the NASEO Energy Security Committee.
- The OEP Deputy Director of Programs, Innovation and Transportation, and Communications served as the Co-Chair for the NASEO Transportation Committee, on the NASEO On-Road Freight Electrification Advisory Committee, as well as a "state advisor" for the NASEO and National Association of Clean Air Agencies (NACAA) VW Diesel Settlement Working Group, which enables state-to-state communication on the VW Settlement Environmental Mitigation Trust.
- The OEP Senior Energy Analyst served on the NASEO Energy Affordability Committee.

OEP Director speaking at the Association of Energy Engineers' Energy Conference & Expo in Nashville.

3 Energy Security Planning, Preparedness, and Response

Pursuant to Tenn. Code Ann. §4-3-510, OEP has the duty and responsibility to "promote state and local energy emergency preparedness in coordination with other appropriate state agencies, such as the military department." Subsequently, OEP is responsible for coordinating Emergency Support Function 12 – Energy (ESF-12) activities related to transportation and heating fuels under the Tennessee Emergency Management Plan to enhance Tennessee's preparedness for disruptions to the state's energy resources.

This work includes the ongoing management of the State Energy Security Plan, the Tennessee Petroleum Shortage Response Guidance, OEP's Standard Operating Procedures checklists, and other energy emergency response reference materials in cooperation with other State agencies and private industry stakeholders. Tennessee's strategic plans and operating procedures are often cited by U.S. DOE as good resources for other SEOs across the country to reference and emulate.

ESF-12 activities also require OEP staff to attend U.S. DOE energy emergency planning seminars, participate in training exercises, and serve as the primary ESF-12 Emergency Services Coordinators (ESCs) for the Tennessee Emergency Management Agency (TEMA). In addition, OEP staff members serve as the State's Energy Emergency Assurance Coordinators (EEACs) for the U.S. DOE's Office of Cybersecurity, Energy Security, and Emergency Response (CESER). Under this program, EEACs act as points of contact in each state during energy emergencies.

State Heating Oil and Propane Program

As participants in the U.S. DOE State Heating Oil and Propane Program, OEP collects weekly propane prices during the winter heating season from a random sample of propane distributors across the state. OEP shares this data with the Energy Information Administration (EIA), which publishes the data regionally to assist both government and private sector entities with monitoring winter propane markets.[1]

Energy Security Planning and Preparedness

- The 2023 Tennessee Energy Security Plan was reviewed by U.S. DOE, which found that the State fully addressed the six elements required by Congress under the Infrastructure Investment and Jobs Act. The Plan was revised to reflect operational lessons learned during recent emergencies and included improvements to the risk assessment section with a new analysis on the importance of the Mississippi River to the fuel supply chain. The State Energy Profile section information was updated to reflect data published by EIA in 2024.
- OEP serves as the Vice-Chair of the State Mitigation Planning Committee, which includes the TDEC Offices of Policy and Sustainable Practices, Tennessee Department of Transportation (TDOT), U.S. Army Corps of Engineers, TEMA Planning staff, TEMA Mitigation staff, and other agencies.
- OEP participates in the State Drought/Wildfire Task Force, Animal Emergency Task Force, and Tennessee Mapping Advisory Committee.
- OEP served on the TVA Integrated Resource Plan (IRP) Stakeholder Working Group, where participants provide input and direct comments during the development of TVA's IRP. The IRP includes power supply mix ranges and recommendations for strategic portfolio direction through 2035 and information on factors that will influence portfolio direction from 2035 to 2050. Once adopted by the TVA Board, the IRP serves as TVA's compass for power generation decisions and long-term operational and financial planning.

1. EIA makes this data available through its Winter Heating Fuels website, which is updated weekly during the winter heating season (October 1 through March 31): https://www.eia.gov/outlooks/steo/report/WinterFuels.php. For additional information, EIA releases its "This Week in Petroleum" report every Thursday: https://www.eia.gov/petroleum/weekly/.

- The OEP Primary ESC worked with the Tennessee Department of Safety and Homeland Security and TEMA Planning to establish critical infrastructure surveys in each county. The survey data will include information regarding the backup generation status for critical infrastructure and will be integrated into the Hazard Mitigation Planning cycle for each county's Hazard Mitigation Plan.

Energy Security Education and Outreach

The OEP Primary ESC served as Energy Security Committee Co-Chair for NASEO and co-hosted national webinars, reviewed NASEO documents, trained energy security staff in other states, participated in U.S. DOE's State Energy Security Training Working Group, and served as a State, Local, Tribal, and Territorial representative for FEMA's Mitigation Framework Leadership Group.

Additionally, OEP engaged in several awareness efforts on the topic of energy security:

- **Outreach:** OEP distributed an Energy Security Quarterly Newsletter to stakeholders in the public and private sectors. The newsletter shared data, case studies, and news items related to energy security and included information on cybersecurity, EIA's short-term energy outlook, and seasonal weather concerns. OEP ESCs also prepared several articles on energy resilience for the TDEC Green Star Partnership quarterly newsletter, which is distributed to industrial and public sector stakeholders across the state.
- **Workshops, Webinars, and Trainings:** OEP ESCs conducted energy security workshops, webinars, and trainings on a variety of topics, including fuel supply, cybersecurity, hazard mitigation, energy data analysis, power grid, and the protection of critical infrastructure information during energy emergencies. The team worked with TEMA, NASEO, U.S. DOE CESER, the Cybersecurity Infrastructure Security Agency (CISA), and the Tennessee Department of Safety and Homeland Security to conduct these sessions.
- **Stakeholder Education:** OEP also participated in targeted engagement and education activities, including the preparation and presentation of situation briefs for energy security stakeholders (e.g., TDEC, CISA, TEMA, Tennessee Department of Health, Governor's Office, U.S. DOE) on the Tennessee Energy Security checklist, Tennessee Energy Security Plan, Petroleum Shortage Response Guidance, fuel supply chain, and pending pipeline and terminal projects.

OEP Primary ESC Ben Bolton presenting on energy sector mitigation at the statewide Emergency Management Association of Tennessee conference.

Energy Security Preparedness and Training Exercises

OEP ESCs participated in several training exercises and energy security briefings with industry personnel, including the following:

- Energy Security and Changes in Federal Policy: Actionable Information to Assist States in Addressing Energy Supply Disruptions;
- National Association of Regulatory Utility Commissioners and U.S. DOE Grid Resilience Valuation Framework cohort;
- U.S. DOE CESER and U.S. DOE Grid Deployment Office Connecting Mitigation and Risk Assessment Framework workshop;
- Nashville International Airport functional exercise;
- Annual Tennessee ESC Workshop;
- Tennessee National Guard annual exercise;
- U.S. DOE Emergency Support Function 12 - Energy Annual Refresher Training;
- Exxon Petroleum Regional Tabletop Exercise (regarding a hypothetical oil spill in the Cumberland River);
- TDEC Division of Water Resources Winter Storm Heather After Action Workshop;
- Annual State Emergency Operations Center Training, including a TVA Nuclear Plant Integrated Training Drill, TVA Nuclear Plant Emergency Training, and a U.S. DOE Oak Ridge Reservation Emergency Exercise; and
- TVA GridEX VIII, held at TVA headquarters in Chattanooga, where OEP and TVA Communications teams tested communication protocols and methods for incidents not rising to a declared state of emergency.

TVA's Jason Krupp speaking at the ESC Workshop on electric vehicles and the electric grid.

Event Spotlight: Energy Security Bootcamp

The OEP Primary ESC helped design and facilitate a nationwide energy security bootcamp hosted by NASEO in Minneapolis, Minnesota. This three-day event included sessions on cybersecurity, planning for threats, and the use of historical power outage data. The workshop included federal speakers from U.S. DOE CESER and speakers from energy industry partners. OEP and U.S. DOE led a tabletop exercise entitled, "Utility Energy Security Plans in Response Efforts." State energy officials and emergency management staff from across the country attended the event.

Emergency Response

Tennessee experienced another challenging year of disasters. Winter Storm Heather struck Tennessee with below-freezing temperatures in January 2024, but unlike Winter Storm Elliot, no curtailment order was issued by TVA. The OEP Primary ESC was activated to support the response and worked closely with TVA and TEMA to implement communication procedures developed after Winter Storm Elliot. As a result, TVA met the largest winter demand peak in its ninety-year history without requiring any additional curtailment or involuntary reductions.

Prior to the event, the OEP Primary ESC worked with the TN Poultry Association and TN Propane Gas Association to ensure poultry operations were well supplied with propane. Consequently, no poultry farms experienced shortages during the storm, and propane distributors were able to concentrate on emergency residential needs.

OEP ESCs were activated for multiple other severe weather events, including flooding, wildfires, and tornadoes. For each of these activations, the OEP Primary ESC served as the Infrastructure Branch Manager to coordinate activities of TDEC, TDOT, TEMA Communications, and private sector infrastructure partners.

OEP Primary ESC Ben Bolton participated in a Blackhawk training flight to better understand Tennessee National Guard resource deployment.

K-12 Energy Education

OEP has a long history of supporting K-12 Energy Education through professional development and student learning opportunities. These offerings connect the broad topic of energy to science, technology, engineering, and math (STEM) subjects and provide students with the knowledge and educators with the resources necessary to teach energy concepts.

OEP's efforts during the Program Year consisted of stakeholder outreach to school directors, principals, and educators on a variety of offerings, including available trainings and award, prize, and recognition opportunities, in addition to continued support of the National Energy Education Development (NEED) Project.

National Energy Education Development Project

OEP is the state coordinator for the NEED Project. The mission of the NEED Project is to promote an energy-conscious and educated society by creating effective networks of students, educators, and business, government, and community leaders to design and deliver objective, multi-sided energy education programs. NEED works with energy companies, agencies, and organizations to bring balanced energy programs to the nation's schools, focusing on strong teacher professional development, timely and balanced curriculum materials, signature program capabilities, and turnkey program management.

OEP assists teachers in learning how to participate in the NEED Youth Awards for Energy Achievement competition. Through this competition, teachers take their energy education program beyond the classroom and get students involved with school and community outreach so that they can share what they learned about energy efficiency and conservation. Students and teachers set goals and objectives throughout the year and record their activities. Schools then combine their materials from the year into scrapbook presentations and submit these presentations to the competition for review. Winners are selected at the state level by OEP and are submitted for award consideration at the national level.

The 2024 NEED Project Youth Award Winners were announced in May. Michie Elementary was named the NEED Project Youth Awards' National Elementary School Runner-Up and, at the state level, the Tennessee Elementary School of the Year. Michie Elementary's Project, "Re-energize," also received an award for Outstanding Workforce Education Project.

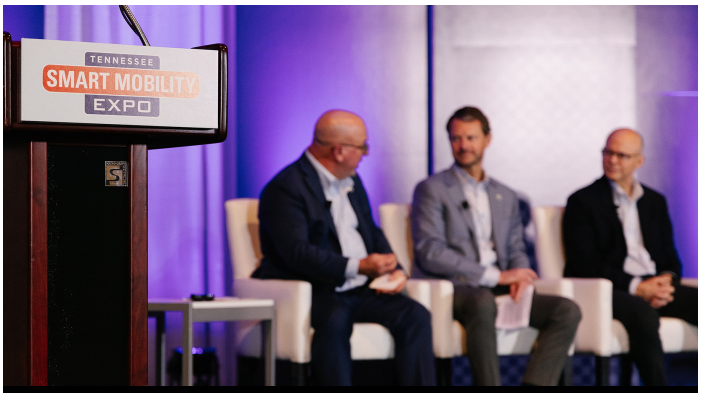
Energy in Transportation

According to EIA, the transportation sector is Tennessee's largest energy-consuming end-use sector, representing 32.4% of Tennessee's total energy consumption in 2023.[2] To address this critical energy sector, OEP promotes and educates Tennessee citizens about alternative fuels, advanced vehicle technologies, and sustainable transportation options. By prioritizing and educating citizens regarding energy use in transportation, OEP seeks to reduce energy costs within the transportation sector, increase the energy efficiency of the transportation sector, enhance resiliency and emergency preparedness through diversification of available fuels, and promote economic growth with improved environmental quality.

Tennessee Smart Mobility Expo

This Program Year, for the first time, the Tennessee Sustainable Transportation Forum & Expo (STF&E), an annual conference coordinated and hosted by OEP, TDOT, the TDEC Office of Sustainable Practices, the Middle-West Tennessee Clean Fuels Coalition, and the East Tennessee Clean Fuels Coalition, joined with the Tennessee Smart Mobility Expo. The joint event aims to promote greater networking and educational opportunities for mobility stakeholders.

Tennessee Smart Mobility Expo indoor test track and display vehicles.



TDEC Commissioner Salyers, TNECD Commissioner McWhorter, and TDOT Deputy Commissioner Elliot on stage at the Tennessee Smart Mobility Expo.

With thought-provoking sessions, tech demonstrations, and a custom indoor test track with the latest EVs—including many built in Tennessee—the Expo celebrates the state's position as an automotive manufacturing giant and generator of smart mobility solutions and allows attendees to share and discover projects that can reshape what is possible in transportation and mobility. The research, technology, planning, and policy developments shared at the event aim to improve transportation efficiency, reduce vehicle emissions, and address the mobility needs of all. Learn more at tnsmartmobilityexpo.com.

Whisper Aero jet plane on display at the Tennessee Smart Mobility Expo.

2. Energy Information Administration, "Tennessee State Profile and Energy Estimates." Accessed on May 13, 2025. https://www.eia.gov/state/?sid=TN

The 2023 Expo was held from December 5-6 in Nashville. Sessions addressed a variety of topics, including urban mobility solutions, emission reduction planning efforts, medium- and heavy-duty fleet electrification, mobility workforce development initiatives, and access for rural transportation. The opening session featured the mayors of Nashville and Knoxville alongside transit and sustainability leaders from Memphis and Chattanooga to discuss strategies to promote safety and to reduce commutes, noise, and pollution. Later that day, keynote speaker Mark Smith, Technology Integration Program Manager at the U.S. DOE Vehicle Technologies Office (VTO), discussed the converging trends shaping mobility and the need to create knowledge, insights, tools, and technology solutions that increase mobility energy productivity through early-stage R&D, demonstration, and deployment. Mark also highlighted VTO's collaboration with and investment in projects across Tennessee. Additionally, Lang Wiseman, former Deputy Governor, moderated a discussion with TDEC Commissioner David Salyers, Tennessee Department of Economic and Community Development (TNECD) Commissioner Stuart C. McWhorter, and TDOT Deputy Commissioner Preston Elliott about the future of sustainable transportation solutions and economic opportunity in Tennessee.

A Putnam County all-electric school bus on display at the Tennessee Smart Mobility Expo.

Middle-West Tennessee Clean Fuels Coalition

Clean Cities and Communities is a U.S. DOE partnership to advance alternative fuels and infrastructure nationwide. More than 75 U.S. DOE-designated Clean Cities and Communities coalitions work locally in urban, suburban, and rural communities to strengthen the nation's environment, energy security, and economic prosperity. As partners with U.S. DOE's Vehicle Technologies Office, coalitions work to deploy affordable, efficient, and lower-emission transportation fuels; energy-efficient mobility systems; and other fuel-saving technologies and practices. Tennessee has two U.S. DOE-designated coalitions in the Clean Cities and Communities partnership: the Middle-West Tennessee Clean Fuels Coalition (MWTCF) and the East Tennessee Clean Fuels Coalition (ETCF). The website for these two Coalitions, known collectively as Tennessee Clean Fuels, may be accessed at http://www.tncleanfuels.org/.

TENNESSEE CLEAN FUELS
MIDDLE-WEST TN CLEAN FUELS
TNCLEANFUELS.ORG

As Coalition Director for MWTCF, OEP provides technical assistance and targeted outreach within the Coalition's territory to raise awareness and foster a greater understanding of alternative fuels and advanced vehicle technologies. Additionally, OEP tracks, validates, analyzes, and reports on critical information and performance metrics necessary to gauge consumer acceptance and track the growth/adoption of technologies and practices in the marketplace.

MWTCF partnering with Drive Electric Nashville to conduct education and outreach during National Drive Electric Week.

In compliance with eligible activities and U.S. DOE grant deliverables, OEP staff conducted the following key activities on behalf of MWTCF:

- Identified and tracked alternative fuel station opening and closing information and kept U.S. DOE abreast of any refueling site openings, closings, and status changes;
- Organized several stakeholder meetings and events to disseminate Clean Cities and Communities and alternative fuel vehicle information;
- Participated and assisted in organizing partner events such as the National Fire Protection Association alternative fuel vehicle safety trainings for first responders, Earth Month events, National Drive Electric Week events, regional Drive Electric TN (DET) chapter meetings; and
- Conducted targeted outreach to fleets, fuel providers, and consumers regarding the use of alternative fuel vehicles and advanced vehicle technologies.

First responders attending Alternative Fuel Vehicle Safety Training.

Annual Reporting to U.S. DOE

Each year, MWTCF contacts fleets and alternative fuel stations that the Coalition engaged with or supported during the year to request data on alternative fuel usage and/or sales; the data is then compiled and submitted in an Annual Progress Report to U.S. DOE. The report for calendar year 2024 covers activity by 34 fleets and 14 fueling station owners in Middle-West Tennessee. Key findings from this report are shown in the figures below.

MWTCF's Calendar Year 2024 Impact:

11.1M
gallons of gasoline equivalent reduced

7,375
lbs. of PM reduced

22.7K
lbs. of NOx reduced

Volkswagen Diesel Settlement

OEP is the lead administrator of the Volkswagen (VW) Environmental Mitigation Trust (EMT) allocation for Tennessee, in coordination with a multidisciplinary Technical Advisory Committee (TAC), which oversees the implementation of the State's Beneficiary Mitigation Plan (BMP). The TAC is comprised of representatives from the following TDEC divisions: OEP, Air Pollution Control, Office of Sustainable Practices, Office of External Affairs, and the Office of General Counsel. The BMP notes TDEC's plans to release separate project solicitations in the following order for each of the environmental mitigation action (EMA) categories that it has selected to fund, with the percent of the initial total funding allocation noted:

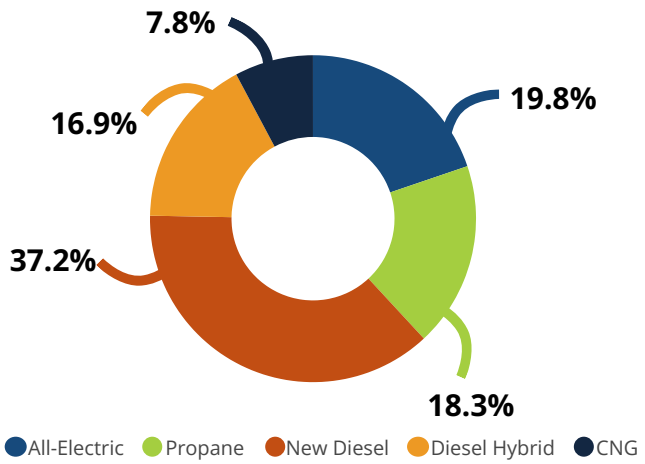
- Class 4-8 School Buses (~20%);
- Class 4-8 Shuttle and Transit Buses (~40%);
- Class 4-7 Local Freight Trucks (15%), Class 8 Local Freight Trucks and Port Drayage Trucks (10%); and
- Light Duty Zero Emission Vehicle (ZEV) Supply Equipment (15%).

The State's BMP targets Tennessee's largest contributors to mobile NOx emissions, including the on-road, diesel heavy-duty, and non-diesel light-duty sectors. As NOx emissions contribute to the formation of ozone and particulate matter, reductions in emissions will assist in the State's efforts to maintain compliance with the National Ambient Air Quality Standard (NAAQS) for Ozone and Particulate Matter.

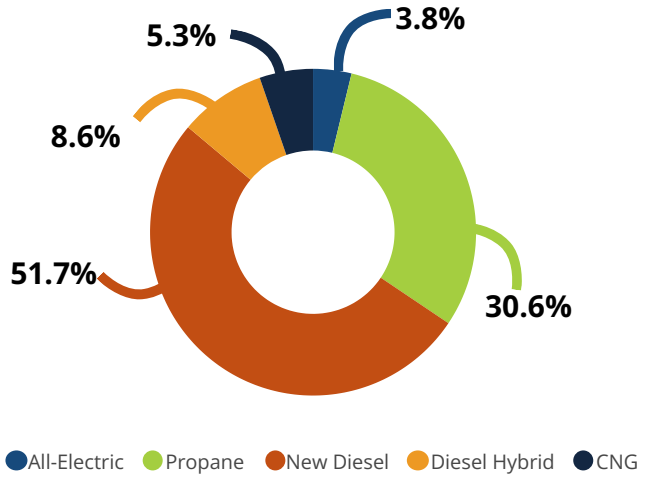
As of the end of calendar year 2024, OEP has obligated $26,578,674.50 in VW Settlement EMT funding to 62 School Bus, Shuttle Bus, Transit Bus, Medium Truck, and Large Truck projects, as well as 12 electric vehicle fast charging projects in Tennessee. Overall, 62% of obligated project funds have been obligated to support alternative fuel projects, including propane, compressed natural gas (CNG), and electric.

VW Settlement EMT Funding Breakout in Tennessee

Total Funding Obligated by Fuel Type



Percentage of Vehicle Replacements by Fuel Type



Learn more about the VW Settlement at http://www.tn.gov/environment/VWSettlement

Access the State's BMP at http://www.tn.gov/environment/VW_BMP

School Bus Replacement Grant Program

Launched in the fall of 2018, the VW Settlement EMT School Bus Replacement Grant Program provides funding to selected projects that replace eligible diesel school buses with new diesel, alternate-fueled, or all-electric vehicles. Thirty-five grantees were selected to replace a total of 133 engine model year 2009 or older school buses with 65 new diesel, one all-electric, 64 propane, and three CNG school buses.

These projects are expected to yield NOx emissions reductions of an estimated 110,568.59 pounds, or 55.28 tons, over the lifetime of the new vehicles. All projects under this grant program were completed in 2022. OEP reimbursed $7.7 million in grant funding to school bus grantees that successfully purchased and put into service qualifying vehicle replacements.

Of the school buses funded by the VW Settlement EMT, 26 operate 70% or more of the time in former nonattainment areas for ozone and/or fine particulates (PM2.5) NAAQS, and 42 operate in State Fiscal Year (FY) 2019 economically distressed counties.[3]

All projects under this grant program were completed in 2022. OEP reimbursed more than $7.7 million in grant funding to school bus grantees that have successfully purchased and put into service qualifying vehicle replacements.

School Bus Replacement Grant Program:

$7,710,801.94

total funding provided under the School Bus Replacement Grant Program in Tennessee

111,542

anticipated pounds of NOx emissions to be reduced over the life of all funded school bus replacement projects

35

grantees selected

133

school buses replaced

Transit and Shuttle Bus Grant Program

In September 2019, TDEC released its second solicitation for projects under the VW Settlement EMT to replace transit and shuttle buses with new alternative-fueled or all-electric vehicles. In May 2020, TDEC announced that three major transit providers in Tennessee would receive funding to replace a total of nine engine model year 2009 or older diesel transit buses with six all-electric and three diesel-hybrid vehicles. These projects are expected to yield NOx emissions reductions of an estimated 17,027.46 pounds, or 8.51 tons, over the lifetime of the new vehicles. The nine funded transit buses will operate 70% or more of the time in former nonattainment areas for ozone and/or PM2.5 NAAQS and will collectively travel more than 400,000 miles annually.

3. Economically distressed and at-risk counties are defined by the Appalachian Regional Commission. https://www.arc.gov/classifying-economic-distress-in-appalachian-counties/.

All projects under this grant program were completed in 2023. OEP reimbursed more than $5.6 million in grant funding to transit bus grantees that successfully purchased and put into service qualifying vehicle replacements.

Transit and Shuttle Bus Grant Program

$5,610,684.25

total funding provided under the Transit and Shuttle Bus Grant Program in Tennessee

17,027

anticipated pounds of NOx emissions to be reduced over the life of all transit and shuttle bus replacement projects

3

grantees selected

9

transit and shuttle buses replaced

Medium and Large Truck Grant Programs

In August 2020, TDEC released an additional solicitation for projects under the VW Settlement EMT to replace eligible class 4-7 local freight truck (medium truck) projects and class 8 local freight truck and port drayage truck (large truck) projects. The grant programs would provide financial assistance to Tennessee public, nonprofit, and private fleets that replace and/or repower eligible medium and large trucks with new diesel, alternative-fueled, or all-electric trucks and/or drivetrains. In 2021, TDEC awarded 21 entities to receive approximately $2.6 million for medium truck projects and $5.5 million for large truck projects across the state.

For the Medium Truck Grant Program, selected awardees will replace a total of 24 engine model year 1992-2009 diesel trucks with ten new diesel, one all-electric, and 14 hybrid trucks. These selected medium truck replacement projects are expected to reduce 6,009.88 pounds, or 3 tons, of NOx emissions over the lifetime of the new vehicles, with a vehicle cost-effectiveness rating of $436.84 per pound of NOx reduced.

For the Large Truck Grant Program, selected awardees will replace a total of 41 engine model year 1992-2009 diesel trucks with 32 new diesel, one hybrid, and eight compressed natural gas trucks. These selected large truck replacement projects are expected to reduce 43,529.53 pounds, or 21.76 tons, of NOx emissions over the lifetime of the new vehicles, with a vehicle cost-effectiveness rating of $127.19 per pound of NOx reduced.

Of the funded vehicle replacements, 51 trucks will operate 70% or more of the time in former nonattainment areas for ozone and/or PM2.5 NAAQS. Sixteen funded trucks will operate in counties that bear a disproportionate share of the air pollution burden.[4] Additionally, four funded trucks will operate in two of the state's FY 2020 economically distressed counties, supporting local government and business economies by offsetting the cost of new and lower-emission vehicle and transportation technologies.

As of September 2024, a cumulative total of $7,086,754.85 has been paid to Medium and Large Truck Grantees for successful vehicle replacement. OEP will continue processing reimbursements for these programs in the coming Program Year after grantees have purchased and have put into service qualifying vehicle replacements.

Medium and Large Truck Grant Program

$8,028,361.16

total funding provided under the Medium and Large Truck Grant Program in Tennessee

60,857

anticipated pounds of NOx emissions to be reduced over the life of all medium and large truck replacement projects

21

grantees selected

65

medium and large trucks replaced

Fast Charge TN Network Grant Program

TDEC and TVA partnered to develop a statewide EV fast charging network to power the growth of EVs across Tennessee and reduce barriers to transportation electrification. Specifically, the two signed an agreement to collaborate and fund a network of fast charging stations every 50 miles along Tennessee's interstates and major highways. In total, the "Fast Charge TN Network" will add approximately 65 new charging locations along prioritized corridor infrastructure gaps.

Fast Charge TN Ribbon Cutting in Lebanon.

This partnership advances the State's goal of establishing a statewide corridor fast charging network that improves transportation efficiency, reduces vehicle emissions, promotes electric adoption, and strengthens the resiliency of the transportation network. TDEC has committed 15%, the maximum allowable, of its VW EMT allocation to fund light-duty electric vehicle charging infrastructure. Approximately $5.2 million from this fund has been allocated to fast charging infrastructure along corridors. The remainder of the project will be funded by TVA, other program partners, and program participant cost share.

In the fall of 2021, TDEC and TVA began seeking project proposals from TVA-served Local Power Companies (LPCs) and other local utilities that distribute electricity in Tennessee, whose service territory is located along prioritized corridor gaps (eligible applicants) to develop the Fast Charge TN Network across Tennessee. As of September 2024, a total of 53 project locations were selected by TDEC and TVA, and 33 of these sites are complete and operational.

Drive Electric TENNESSEE

Drive Electric Tennessee

Drive Electric Tennessee (DET), a consortium of State agencies, utilities, local governments, universities, research institutions, EV manufacturers, businesses, and advocacy groups, was formed in 2019. DET's Electric Vehicle Roadmap identifies "Opportunity Areas" that will increase electric vehicle adoption across multiple Tennessee use cases and sectors, with a goal of 200,000 electric vehicles on the road in Tennessee by 2028.[5]

4. The State Trust Agreement requires Beneficiaries to include within the BMP a "description of how the Beneficiary will consider the potential beneficial impact of the selected Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction." To address these requirements, the State has developed a "Disproportionate Burden Index" (DBI), which combines environmental, economic, and demographic datasets in a geospatial format to determine geographic units in Tennessee that have the highest air quality burden. For more information on the DBI, refer to Section VI. Consideration of Disproportionate Burden and Appendix 7 – Identification of Areas that Bear a Disproportionate Share of Air Pollution of the State of Tennessee's Beneficiary Mitigation Plan.

5. As of Q4 2024, there were approximately 51,852 electric vehicles registered in Tennessee. This number is provided by the Tennessee Department of Revenue to OEP on a quarterly basis, based on actual vehicle registration data for the state.

Throughout the Program Year, approximately five years following the initial publication of the Roadmap, DET kicked off a "Roadmap Refresh" effort, intended to re-evaluate the Roadmap's goals, priorities, targets, and activities in the context of the current landscape. DET members convened to identify data needs and resources, discuss lessons learned from the years following Roadmap publication, and develop new initiatives to address how the consortium can most effectively advance vehicle electrification as EV markets, public awareness, available resources, and funding continue to evolve. This Refresh process will continue into Program Year 2024-2025.

In addition, three Opportunity Area committees addressed various projects and initiatives highlighted in the current Roadmap: Charging Infrastructure Availability, Policies and Programs, and Awareness. Each of these Opportunity Areas is co-chaired by OEP and MWTCF personnel, who guide and oversee DET efforts to complete projects that promote EV adoption. The following list notes the committees' activities and priorities for the Program Year:

- **Charging Infrastructure Availability:** 1) Evaluation of funding opportunities and ownership models to support the implementation of a public, statewide EV charging network; 2) connecting stakeholders with resources and opportunities for a variety of infrastructure categories including multifamily unit dwellings, corridor fast charging, at-home charging, and electrical code compliance; and 3) discussion and dissemination of information related to program progress and development, including Fast Charge TN and NEVI, as well as EV infrastructure market developments.
- **Policies and Programs:** 1) The group met to help shape policies and implement programs that accelerate the adoption of EVs, focusing on topics of discussion and projects to lead the charge toward a more sustainable transportation ecosystem; 2) Regularly share information and external resources to assist organizations in implementing meaningful policies and programs to promote widespread adoption of EVs across sectors and types of communities.
- **Awareness:** 1) Evaluation of opportunities for funding of DET Awareness related work, including funding to conduct events and develop marketing materials; 2) promotion of DET's social media and website presence; 3) coordination and continued creation of DET Chapters across Tennessee to serve as local resources for EV education and outreach; 4) assisting with DET Chapter events across the state to engage the public on EV topics and provide ride-and-drive opportunities; and 5) continued promotion of the DET specialty license plate.

EV stakeholder engagement is at a historic high for Tennessee, with multiple organizations partnering to promote EV awareness activities and build out a suite of EV-related resources. DET and partners will continue addressing the priorities and projects in 2024-2025. For more information on DET, visit www.DriveElectricTN.org

Tennessee Bus Electrification, Education, and Planning

Tennessee Bus Electrification, Education, and Planning (TN BEEP) is a partnership that provides no-cost education and assistance to school district leadership and fleet management personnel in the state. This partnership can help any district that wants to "make the switch" to electric or other alternative-fuel school buses and support applications for funding these vehicle transitions. Partners include DET, both Tennessee Clean Fuels Coalitions, TDEC, and TVA.

Diesel Emissions Reduction Act

Beginning in Program Year 2021-2022, OEP became the lead administrator for the State's annual DERA allocation from the U.S. Environmental Protection Agency (EPA). Prior to this, TDEC's Division of Air Pollution Control (APC) served as the lead administrator for the State's DERA allocation. Due to the growth and success of OEP's Energy in Transportation programming, TDEC leadership and APC elected to transfer the program to OEP.

TDEC utilized its annual allocation to provide grant funding to minimize the costs associated with medium- and heavy-duty vehicle replacement projects, which decrease emissions from older diesel vehicles across the state through the replacement of such diesel vehicles with newer vehicles and equipment. Applicants may propose diesel vehicle replacement projects with a particular emphasis on alternative fuels adoption (e.g., propane, compressed natural gas, electric), hybrid vehicle adoption, and implementation of other emission-lowering vehicle technologies (e.g., idle reduction measures).

OEP contracts with the East Tennessee Clean Fuels Coalition (ETCF) to oversee DERA project solicitation and selection on behalf of TDEC through the Reducing Diesel Emissions for a Healthier Tennessee (RDE4HT) program. ETCF's experience with the State DERA program requirements and knowledge of Tennessee's alternative fuel vehicle and fleet management landscape uniquely position ETCF to assist with the programming of the State DERA allocation through RDE4HT.

In early 2024, OEP and ETCF awarded $296,000 to five fleets across Tennessee to replace seven older, diesel vehicles with new, lower-emitting vehicles, including three dedicated propane school buses and two diesel-hybrid ambulances.

Weakley County Schools' DERA-funded dedicated propane school bus.

Infrastructure Investment and Jobs Act

In November 2021, the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), was signed into law. Throughout the Program Year, OEP staff reviewed and responded to a variety of Notices of Intent, Requests for Information, Funding Opportunity Announcements, and Administrative and Legal Requirements Documents issued by U.S. DOE regarding IIJA formula programs (e.g., IIJA State Energy Program, Energy Efficiency and Conservation Block Grant, Revolving Loan Fund Capitalization Grant Program, Energy Auditor Training, and the Charging and Fueling Infrastructure Grant Program). In addition, OEP shared information on available funding opportunities with relevant stakeholders and convened working groups, where applicable, to position eligible applicants to be prepared to apply for and secure funding for applicable projects.

National Electric Vehicle Infrastructure (NEVI) Program

IIJA includes $7.5 billion in dedicated funding to help make EV charging infrastructure accessible to all Americans for local and long-distance trips. This funding includes a $5 billion NEVI Formula Program to help states create a network of EV charging infrastructure along nationally designated Alternative Fuel Corridors (AFCs). The State of Tennessee expects to receive approximately $88 million over five years (FY2022-2026). During the Program Year, OEP staff supported TDOT with stakeholder engagement, program development, and application evaluation for the NEVI program.

Following the November 1, 2023, deadline for proposals under the first Notice of Funding Opportunity released by TDOT under the Tennessee Electric Vehicle Infrastructure (TEVI) Program, OEP supported TDOT in the application evaluation process. In January 2024, TDOT announced the selection of thirty proposals to receive approximately $21 million in federal funding to establish new fast charging locations around the state. Throughout the remainder of the Program Year, OEP continued to support TDOT in navigating the contract negotiation process with selected recipients.

Grid Resilience Formula Grant Program

The Grid Resilience Formula Grant Program provides grants to States (including U.S. Territories) and Indian Tribes to improve the resilience of the electric grid against disruptive events. OEP is the lead administrator of the program in Tennessee. The State of Tennessee's plan, or Program Narrative, for the Grid Resilience Formula Grant Program was submitted to U.S. DOE in April 2023 as part of an application for Year 1 and Year 2 formula funding under this five-year program. The application for Year 3 funding was submitted in April 2024. Throughout the Program Year, OEP staff established and convened a Stakeholder Working Group, comprised of LPCs, local governments, ORNL staff, and representatives of higher educational institutions, to inform program design. OEP staff also received direct technical assistance from ORNL (funded by U.S. DOE's Grid Deployment Office) on 1) data-driven analysis of outages; 2) engaging with stakeholders to establish metrics, data exchange, and interoperability considerations; and 3) analyses to evaluate mitigation technologies before and after deployment. OEP plans to release a solicitation for projects in the next Program Year.

Energy Efficiency Conservation Block Grant Program

U.S. DOE's Energy Efficiency Conservation Block Grant Program (EECBG) provides grants to states to make subgrants available to units of local government that were not eligible for direct federal formula grants. Tennessee's EECBG Program will provide funding to assist local governments in creating and implementing strategies to improve energy efficiency in government-owned buildings with multi-use purposes within the most economically distressed counties as defined by the Appalachian Regional Commission (ARC). [6]

6. Economically distressed and at-risk counties are defined by the Appalachian Regional Commission. https://www.arc.gov/classifying-economic-distress-in-appalachian-counties/.

In April 2024, OEP was awarded a formula grant of $2,484,530 for the Tennessee EECBG Program. Of the Tennessee distressed counties recognized by the ARC as of July 2024, Bledsoe, Cocke, Grundy, Hartman, Haywood, Lake, Perry, and Scott elected to participate. OEP worked with the TDEC Office of General Counsel to develop grant contracts and related program collateral. OEP also supported the eight counties in applying for U.S. DOE's Energy to Communities Expert Match Program, and all were selected to receive no-cost technical assistance from ORNL to identify and prioritize buildings in each county to be audited for potential energy efficiency upgrades. OEP plans to initiate energy audits prior to executing associated energy efficiency upgrades in the following Program Year.

Revolving Loan Fund Capitalization Grant Program

U.S. DOE's Revolving Loan Fund (RLF) Capitalization Grant Program provides capitalization grants to states to establish an RLF under which the state may provide loans and grants for energy efficiency audits, upgrades, and retrofits to increase energy efficiency and improve the comfort of buildings.

In May 2024, OEP was awarded a formula grant of $10,052,220 for the Tennessee RLF. OEP utilized the maximum 25% of funding available for grants and technical assistance under the RLF Program to augment Tennessee's EECBG grant program for the eight economically distressed counties that elected to accept EECBG funding. Throughout the Program Year, OEP staff met with the TDEC Office of General Counsel and other stakeholders to explore existing RLFs in Tennessee, TDEC's current RLF rules, and options for programming the loan portion of the grant for future energy financing opportunities.

Energy Auditor Training Program

U.S. DOE's Energy Auditor Training (EAT) Program provides grant funding to states for the purpose of training individuals to conduct energy audits, or surveys, of commercial and residential buildings. OEP partnered with multiple states in the southeast and the U.S. Virgin Islands on applications as a Southeast Collaborative Partnership for both a residential and commercial program. OEP led the application for the Residential Energy Auditor Program with partners from state energy offices in Georgia, Kentucky, North Carolina, South Carolina, and the U.S. Virgin Islands. The Georgia state energy office, under the Georgia Environmental Finance Authority, led the application for the Commercial Energy Auditor Program with OEP and state energy offices from Kentucky, Mississippi, North Carolina, and the U.S. Virgin Islands.

Charging and Fueling Infrastructure Program

The Charging and Fueling Infrastructure Grant Program under the U.S. Department of Transportation provides funding to strategically deploy publicly accessible electric vehicle charging infrastructure and other alternative fueling infrastructure. OEP partnered on an application with a third party to propose the building of Tennessee's first electric truck charging hubs in the Nashville area. The project would include a combined total of 100 connectors at 150 kW each across two sites.

Transmission tower after a rainstorm.

Inflation Reduction Act

In August 2022, the Inflation Reduction Act (IRA) was signed into law. Throughout the Program Year, OEP staff reviewed and responded to a variety of Notices of Intent, Requests for Information, Funding Opportunity Announcements, and Administrative and Legal Requirements Documents issued by U.S. DOE and U.S. Environmental Protection Agency (EPA) related to IRA formula and competitive funding (e.g., Home Energy Rebate Programs, Training for Residential Energy Contractors Program, and EPA's Solar for All Program). In addition, OEP shared information on available funding opportunities with relevant stakeholders and convened working groups, where applicable, to position eligible applicants to be prepared to apply for and secure funding for applicable projects.

Solar for All Program

The EPA's competitive Solar for All Program provides grants to states, U.S. territories, and tribes, enabling low-income households to benefit from distributed solar energy, deliver cost savings on electric bills, and provide energy resilience.

In April 2024, OEP was awarded a grant of $156,120,000 for the Tennessee Solar for All Program. Throughout the Program Year, OEP staff hosted monthly calls with key stakeholders, including TVA, LPCs, nonprofits, and community-based organizations, and met with the EPA Project Officer to begin program design. OEP staff developed and revised Tennessee's Solar for All workplan, timeline, and budget for EPA approval, which positioned OEP to begin a one-year planning period in the following Program Year.

Additionally, in April 2024, OEP staff attended a Clean Energy States Alliance conference in Washington, DC, to discuss Solar for All designs and best practices for consumer protection.

OEP staff also attended monthly NASEO Solar for All Working Group meetings to collaborate with representatives from other states on best practices for program design.

Home Energy Rebate Programs

The IRA included two residential energy efficiency and electrification rebate programs administered by U.S. DOE, the Home Energy Performance-Based Whole House Rebate (Home Efficiency Rebates) and the High-Efficiency Electric Home Rebate Program (Home Electrification and Appliance Rebates). During the Program Year, OEP worked on applications for both home energy rebate programs with implementation partner TVA.

Tennessee's allocation for the Home Efficiency Rebate Program is $83,708,676. Rebates for energy efficiency retrofits will range from $2,000-$8,000 for individual households and up to $400,000 for multifamily buildings based on both income qualification as well as the amount of energy saved.

Tennessee's allocation to administer the Home Electrification and Appliance Rebate Program is $83,390,060. Rebates for electric appliances are set by legislation and are specifically targeted to low-income households. Appliance purchases must be carried out as part of a new construction project, or as a first-time purchase of a heat pump for space conditioning in an existing home that is installed to provide the primary heating and cooling for the household.

OEP held a public input session in May to provide an update on the status of the Inflation Reduction Act's Home Energy Rebate Programs and solicit community input. Interested stakeholders were given the opportunity to provide feedback at the end of the public input session. Public comments were also collected via survey.

Training for Residential Contractors Program

U.S. DOE's Training for Residential Energy Contractors (TREC) Program, also known as the State-Based Home Energy Efficiency Contractor Training Grants, provides funding to states, territories, and Washington D.C. to reduce the cost of training, testing, and certifying residential energy efficiency and electrification contractors. During the Program Year, OEP applied for over $2.9 million in funding to support the upskilling of existing workers and develop a pipeline of new workers. OEP worked with a Workforce Advisory Group of stakeholders to design the application, which included members from multiple organizations, such as the Tennessee Department of Labor and Workforce Development, Tennessee Board of Regents, Tennessee Department of Human Resources, and TVA.

Clean Heavy-Duty Vehicle Program

The EPA's Clean Heavy-Duty Vehicle Program provides funding to accelerate the replacement of existing internal combustion engine heavy-duty vehicles with zero-emission vehicles. OEP was tentatively selected for $890,000 in funding under the program in partnership with multiple fleets in Tennessee to replace diesel class 6 and 7 vehicles with new, all-electric vehicles.

OEP Director at the Association of Energy Engineers' Energy Conference & Expo in Nashville.

STATE FACILITY UTILITY MANAGEMENT

To maximize utility savings opportunities for State facilities, the State building energy management statutory responsibilities for State-owned and managed properties (Tenn. Code Ann. §§ 4-3-1012 and 4-3-1017-1019) were transferred from the Department of General Services (DGS) to TDEC OEP via Executive Order No. 63 in January 2017, and State Facility Utility Management (SFUM) was formed under OEP.

SFUM strives to provide actionable utility insights to State facilities, enabling them to make informed decisions that optimize their facilities' energy consumption and associated utility savings. To support this goal, SFUM administers several initiatives, including the following:

- Development, maintenance, and end-user training for an online Utility Data Management (UDM) platform for approximately 74 General Government agencies and Higher Education campuses.
- Publication of an annual Utility Data Analysis Report that provides utility usage and cost data and utility analysis for State-owned and managed properties. The report also highlights UDM platform features and benefits for General Government agencies and Higher Education campuses.
- Provision of no-cost technical assistance programs and support to State agencies and Higher Education facilities to promote the implementation of energy projects that meet the needs, budgets, and priorities of participating entities.

Utility Data Management Platform

The UDM platform serves as a central repository for the historical and ongoing utility cost and usage data[7] of approximately 9,000 State-owned and -managed facilities, representing approximately 114 million square feet of building space. The platform is predominantly used for utility tracking, reporting, and benchmarking for General Government agencies and Higher Education institutions, as well as utility bill auditing and approval for payment for General Government agencies. The UDM platform serves the 75 General Government agencies and Higher Education public institutions and contains data regarding approximately 9,000 accounts and 11,000 utility meters.

Since launching the UDM platform in 2019, the SFUM team has provided aggregated utility usage and cost data for these facilities to help State fiscal personnel, building maintenance staff, utility and facility managers, sustainability professionals, and technical assistance providers gain actionable insights into their utility data. Before the launch of the UDM platform, obtaining this data required significant effort to locate utility accounts, gather utility bills, and manually enter data. As a result, utility cost and usage data were rarely analyzed by State personnel.

The SFUM team's successful integration of the UDM platform into the General Government's bill payment system, Edison, continues to support remote work and workplace flexibility for General Government agency accounts payable (AP) staff through automated bill entry and by allowing multiple users to perform online bill review, approval, and editing simultaneously. Additionally, the platform facilitates team collaboration through the use of bill notes, assigned flags, shared dashboards, and reporting. The UDM platform's ability to track, record, and date individual user activities has accommodated remote and alternative workplace solutions for most fiscal departments.

The SFUM team provides ongoing data quality control of the UDM platform for both General Government agencies and Higher Education institutions to address data gaps, identify new or inactive accounts, verify meter serial numbers and rate schedules, correct bill service dates, unit of measurement disagreements, and cost adjustments, in addition to ensuring that meters are assigned to their correct buildings and that associated building stock information (e.g., building names, address, longitude/latitude, square footage, construction date, and use type) is updated accordingly.

In addition to UDM platform maintenance, SFUM continues to administer remote and in-person UDM platform training and presentations for new and existing platform users and public inquiries. Throughout the Program Year, the SFUM team conducted 58 trainings on the UDM platform, covering topics such as end-user roles and responsibilities, platform configuration, navigation, reporting, dashboards, and bill processing to strengthen end-user familiarity, knowledge, and utilization of the UDM platform for more than 197 facility managers, maintenance staff, AP personnel, and sustainability professionals within State service.

Utility Data Analysis Report

The overarching goal of the Utility Data Analysis Report[8] is to communicate the State's utility cost and consumption to a broader audience and underscore the capabilities and benefits of the UDM platform, which facilitated the transition from manual data collection, entry, and analysis. The report compares utility usage data for the current and prior Fiscal Year across the four organizational groups: General Government, the University of Tennessee (UT) System, the Tennessee Board of Regents (TBR), and Locally Governed Institutions (LGIs). It also provides data on the six types of utility commodities: electric power (electric), natural gas, steam, propane, chilled water, and water/sewer.

7. Cost and usage data for most utilities are predominately captured monthly. Some utility bills are captured on a quarterly or other basis.

8. FY2023 Utility Data Analysis Report, https://www.tn.gov/content/dam/tn/environment/energy/documents/sfum/TDEC-SFUM_UDM-Data-Analysis-Report-FY2023.pdf

The chief benefits of the UDM platform utilization for facility managers, accounting staff, and administrators alike, as featured in the report, are the ability to:

- Remotely track, benchmark, and report utility usage;
- Accommodate remote and alternative workplace solutions;
- Easily identify billing errors, billing discrepancies, potential energy-inefficient facilities, and faulty meters or water/gas leaks;
- Automate bill entry to reduce human errors occurring from manual bill entry, as well as time spent manually entering bills;
- Share standardized reports with leadership; and
- Provide greater accountability and capability for cross-functional collaboration.

For General Government, over 90% of utility bills processed monthly for payment are automatically drafted by the utility provider. The UDM platform has assisted General Government AP staff in identifying unauthorized charges, such as charitable contributions, taxes, or other fees from which the State is exempt, allowing them to seek utility vendor reimbursement. In other instances, the SFUM team has leveraged UDM to detect abnormal increases in building water usage and then contact the appropriate General Government facility staff to look for potential leaks.

Work on the FY 2024 report has begun, and the SFUM team anticipates distributing the report by late in the third quarter or early in the fourth quarter of 2025. In the meantime, the SFUM team continues to provide technical assistance and training opportunities to UDM end-users (e.g., State fiscal personnel, utility and facility managers, building maintenance personnel, and sustainability professionals) from across the State to maximize the utilization of UDM.

UDM Platform Utilization and Technical Assistance

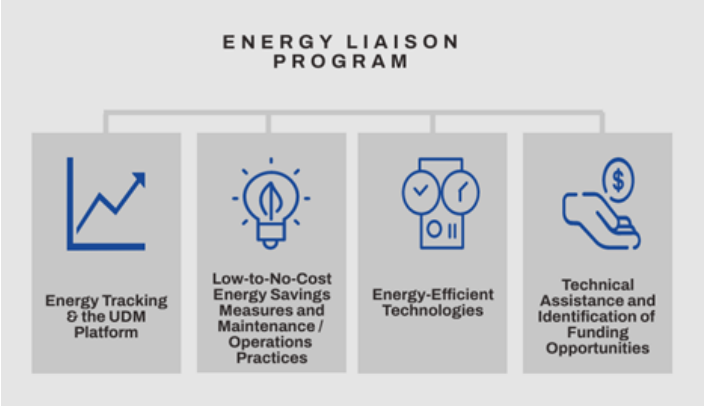
The SFUM team and UDM end-users continue to utilize the UDM platform to assist in the tracking, development, and validation of energy conservation measure (ECM) projects and fulfillment of technical assistance requests to resolve issues involving billing errors (such as overbilling), faulty metering, energy spikes, water leaks, and unauthorized charges such as charitable contribution charges, taxes, and other fees. During the Program Year, General Government agencies recouped over $50,631[9] in utility cost reimbursements due to utility issues identified by SFUM and the UDM platform.

Examples of Water Leak Detection

Through the UDM platform, SFUM was alerted to multiple high water usage incidents throughout the Program Year. The UDM platform noted that in these instances, the water costs and use per day were substantially higher than in previous bills, which notified the SFUM team. Once alerted to the issue, the SFUM team coordinated with the appropriate facility and AP staff to research and address the potential water leaks so that any confirmed leak could be repaired.

Examples of State agencies that experienced water leaks that were confirmed through the UDM platform, and the corresponding water utility credits from the Program Year include:

- Tennessee Department of Human Services on Murfreesboro Highway: Credit of $7,568.96.
- Tennessee Department of Homeland Security on Volunteer Parkway: Credit of $1,950.49.
- Tennessee Department of Children's Services on Stewarts Lane: Credit of $15,769.27.
- Tennessee Department of Transportation on Regions Lane: Credit of $25,342.75.



Energy Liaison Program

During the Program Year, OEP continued to grow its Energy Liaison Program (ELP). The program is designed for facility, sustainability, maintenance, and energy managers in State-owned and -operated facilities to provide them with technical assistance and professional development opportunities, including peer-to-peer learning and sharing of best practices regarding topics such as:

- Energy Tracking and the UDM Platform;
- Low-to-No-Cost Energy Savings Measures and Maintenance/Operations Practices; and
- Energy Efficient Technologies.

The ELP hosted four webinars during the Program Year, which highlighted the following:

- TVA's renewable energy programs;
- The UDM platform, EnergyCap, and how to navigate the platform, manage bills, manage flags, and review reports and dashboards;
- HVAC and boiler system efficiency standards and codes; and
- Commercial building water efficiency, water system management effects on energy efficiency, and case studies of government and higher education facilities that implemented water efficiency programs.

Following each ELP webinar, a newsletter is distributed to all ELP members with a recap of the previous quarterly meeting and information on industry news, upcoming events and training opportunities, relevant energy resources, and reminders of resources available on the ELP website and for the UDM platform.

UDM users, facility, sustainability, maintenance, and energy managers in State-owned and -operated facilities interested in joining the ELP can contact TDEC.SFUM@tn.gov.

9. Total utility cost reimbursement is based on information voluntarily reported to the SFUM team by General Government agencies, as they are not required to report this data to SFUM.

TENNESSEE'S ENERGY, EMISSIONS, AND EMPLOYMENT PROFILE

Tennessee is unique in the energy utility sector in that TVA, a federally-owned corporation, provides electricity to approximately 99.7% of the electricity service territory in the state. TVA is self-regulated regarding its fuel mix and associated power generation. The following images are taken from TVA's "TVA in Tennessee" fact sheet.

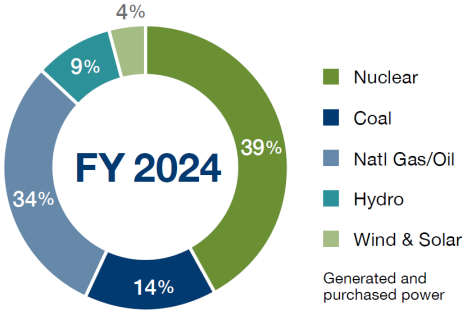
Delivering affordable, reliable, clean energy

TVA operates one of nation's largest generation portfolios – diverse and clean

Lower residential power rates than those paid by
Over 80%
of the customers of the top 100 U.S. utilities

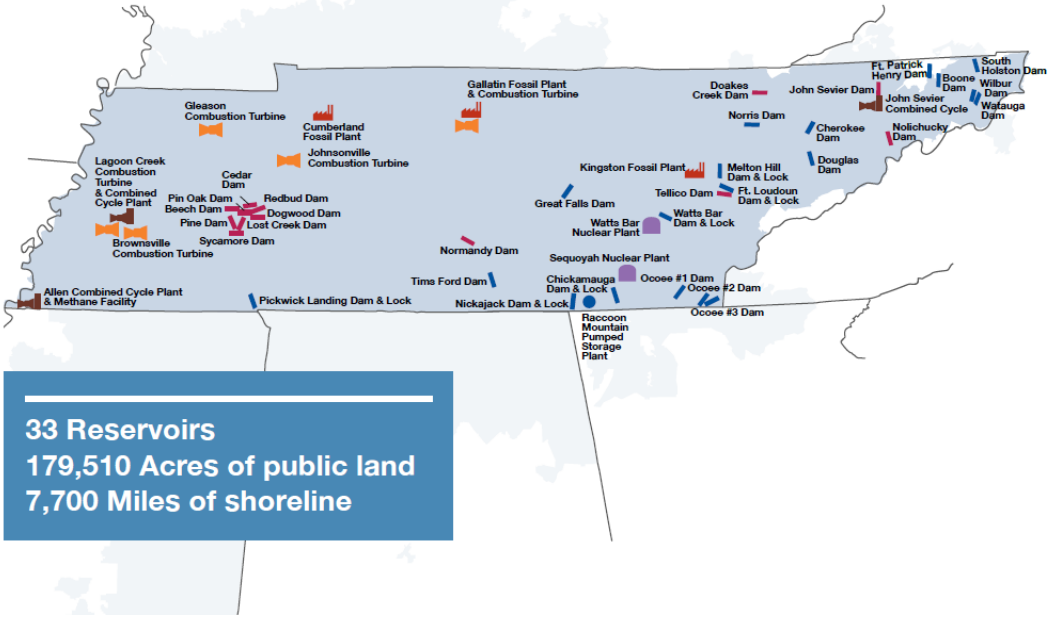
Investing in
New Generation and New Technologies

Robust and Diverse Energy Supply



Our Impact

We proudly serve the people and communities of **Tennessee** by supplying energy for **7,022,772 people** through **82 local power companies** and for **26 large, direct-served customers** in the state. Reliable, affordable, clean energy from TVA helps **Tennesseans** across more than **42,000 square miles** stay connected, save money and get ahead. Our work is having an impact:



33 Reservoirs
179,510 Acres of public land
7,700 Miles of shoreline

TVA assets in the state

- 19 hydroelectric dams
- 13 non-power dams
- 3 coal-fired plants
- 2 nuclear plants
- 8 natural gas-fueled facilities
- 1 pumped-storage hydroelectric plant
- 298 substations & switchyards
- 9,455 miles of transmission line

TVA has contracted for over 2,100 MW of renewable biomass, hydro, solar, and wind capacity in Tennessee

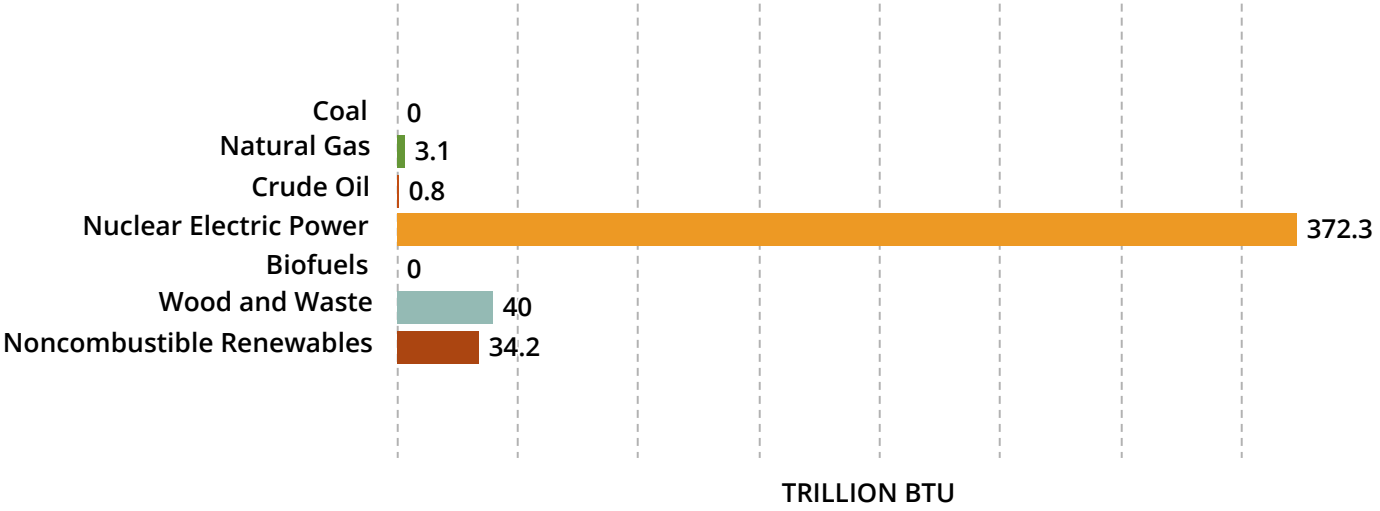
The following bullets highlight a few key facts about the energy sector in Tennessee:

- More than 90% of Tennessee's electric generating capacity and about three-fifths of the power plants in the state are owned by TVA, including the 10 largest power plants in the state by both capacity and annual generation.
- Tennessee's two nuclear power plants provided 48% of in-state electricity in 2023. Tennessee ranks in the top 10 states for total nuclear generation.
- Tennessee's one petroleum refinery, located in Memphis, can process about 180,000 barrels of crude oil per calendar day, which is about 1% of U.S. total refining capacity.
- Natural gas fueled 19% of in-state generation in 2023, and the amount of natural gas consumed by the state's electric power sector nearly tripled from a decade earlier.
- Tennessee is the sixth-largest hydroelectric power producer in the nation. Hydroelectric power contributed 12% of the state’s generation in 2023.
- The average electricity price in Tennessee is below the national average, and the average price for the residential sector is among the lowest 10 states. About 65% of households in Tennessee use electricity as their primary energy source for home heating.
- The TVA's 1,616-megawatt Raccoon Mountain pumped storage plant, which began operating in 1978, is the fourth-largest power plant and the largest hydroelectric facility by generating capacity in Tennessee.
- By mid-2024, Tennessee had about 601 megawatts of total solar power generating capacity, and most of the state's utility-scale solar PV generating facilities are located in southwestern Tennessee. Tennessee’s largest solar farm, with 150 MW of capacity from 500,000 solar panels, came online in 2022.
- Tennessee is the 14th largest biofuels producer in the nation. The state has three fuel ethanol plants with a combined production capacity of about 250 million gallons per year, which is about one-fourth less than the state's annual ethanol consumption of 340 million gallons.

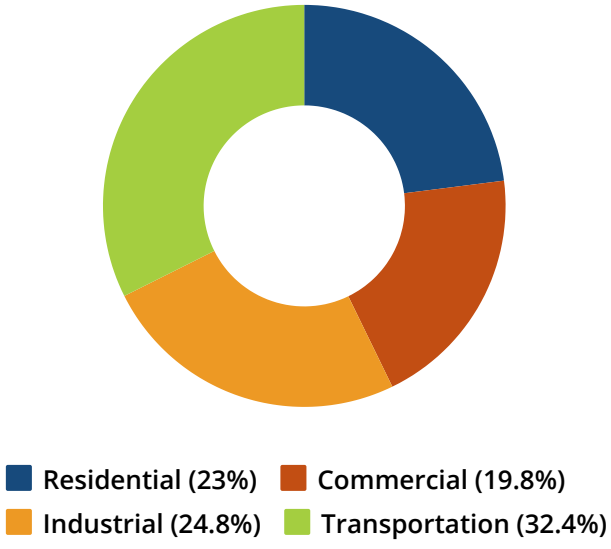
Energy Consumption and Production

U.S. Energy Information Administration (EIA) maintains some of the most comprehensive state-specific data on energy consumption, production, prices, and expenditures by source and sector. The following graphs detail Tennessee's energy production estimates, energy consumption by end-use sector, and energy consumption estimates for calendar years 2022 and 2023.[10] For additional information and data on Tennessee, please visit https://www.eia.gov/state/?sid=TN.

2022 Energy Production Estimates in Tennessee

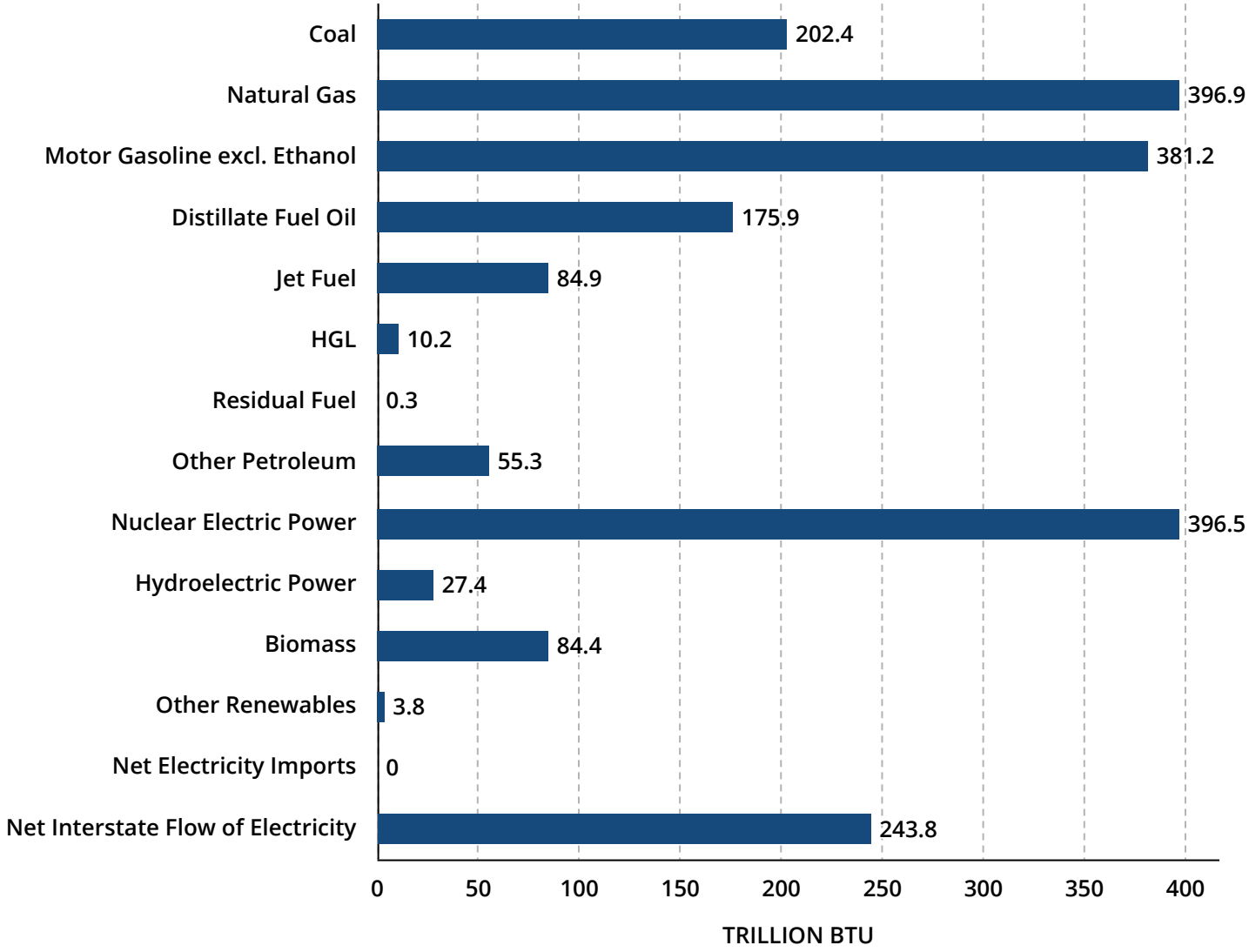


2023 Energy Consumption by End-Use Sector in Tennessee



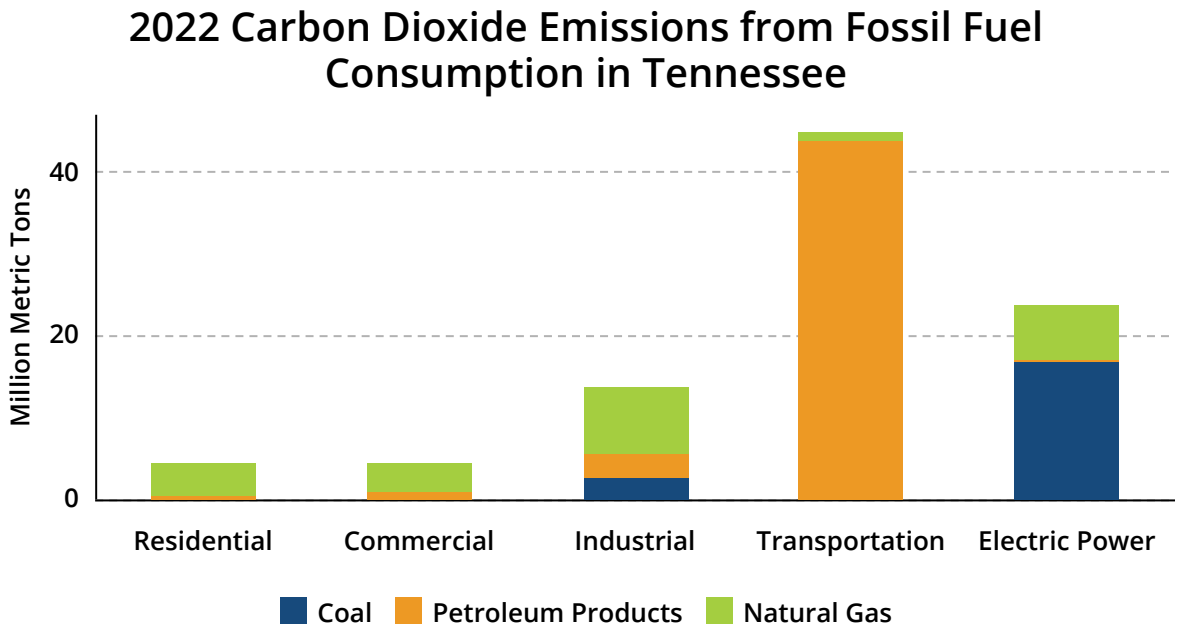
10. Data from two years prior is finalized by the EIA annually, typically in the third quarter of the calendar year.

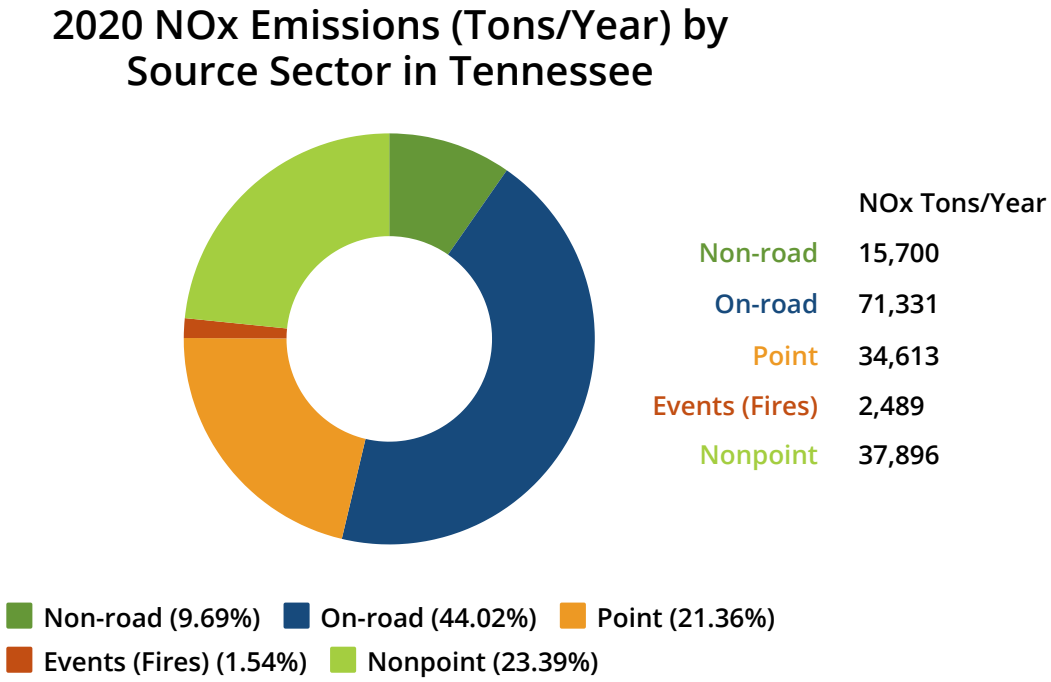
2023 Energy Consumption Estimates in Tennessee



Energy Sector Emissions

Statewide emissions data associated with energy consumption can be found through EIA and the National Emissions Inventory (NEI). [11]





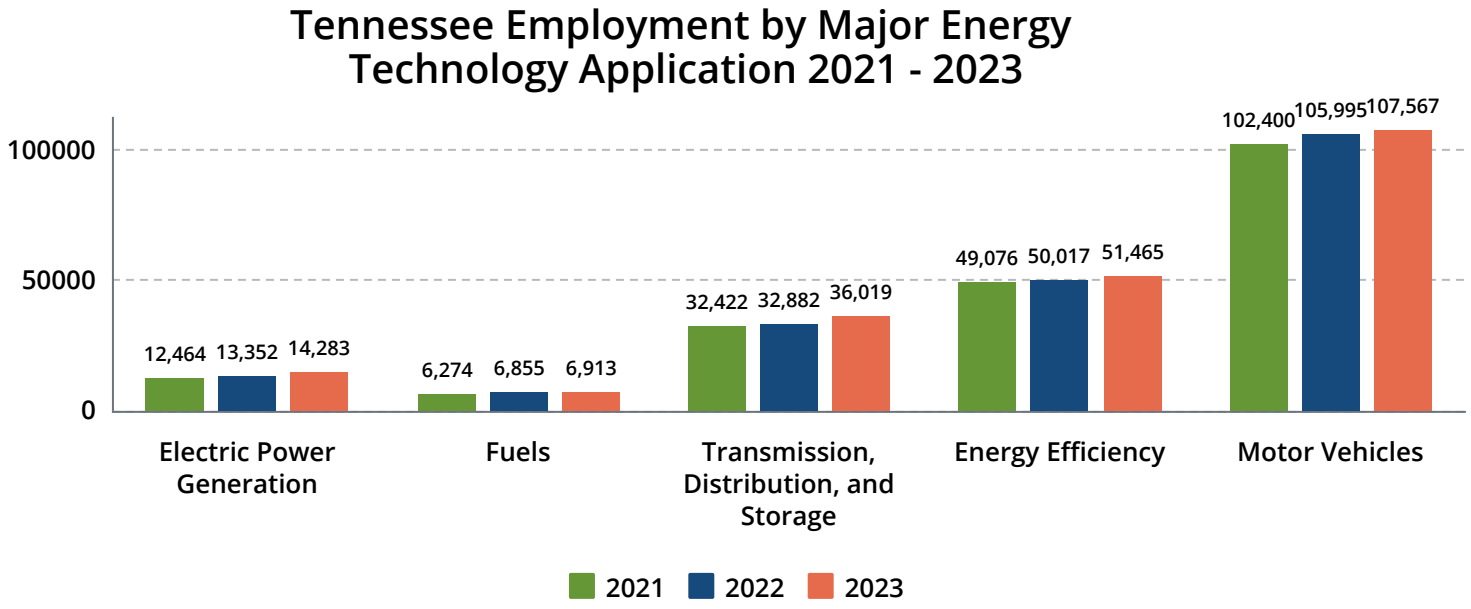
11. Aggregated data from two years prior is typically finalized by EPA every three years. The NEI can be accessed at https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei

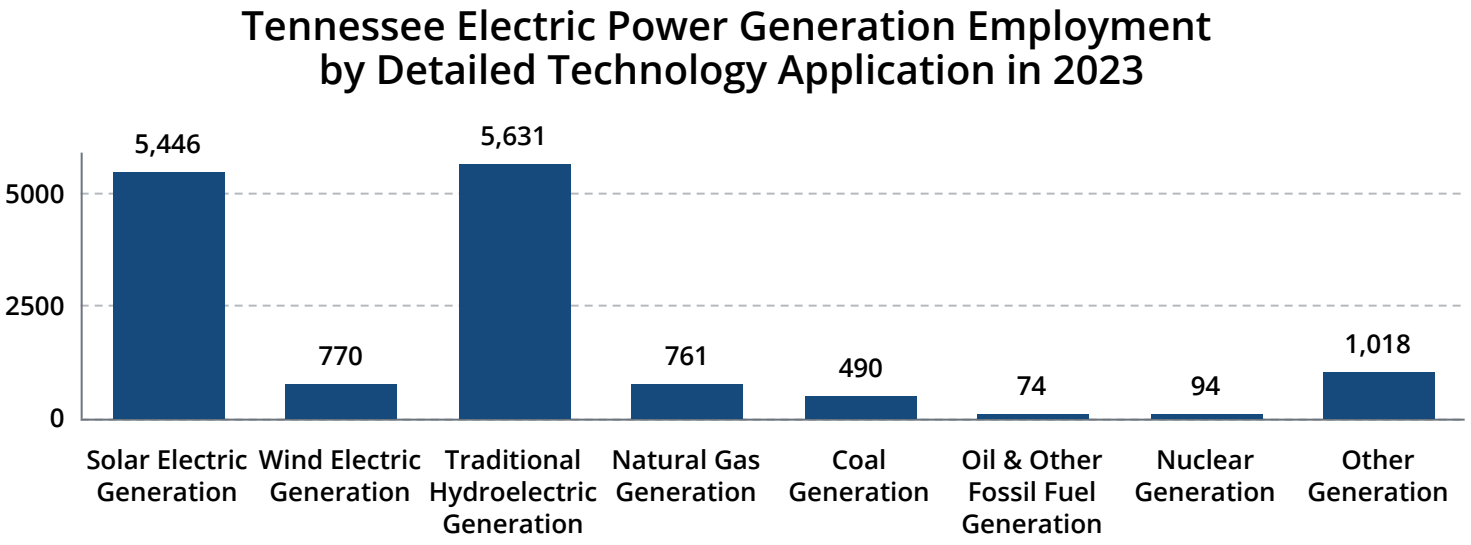
Energy Sector Employment

According to the U.S. DOE's 2024 U.S. Energy and Employment Report (USEER),[12] Tennessee had 216,246 energy workers statewide in 2023, representing 7.1% of total state employment and 2.6% of all U.S. energy jobs. These energy jobs are distributed in the following areas:

- 14,283 workers in electric power generation
- 6,913 workers in fuels
- 36,019 workers in transmission, distribution, and storage
- 51,465 workers in energy efficiency
- 107,567 workers in motor vehicles

From 2022 to 2023, Tennessee saw a 9.5% increase in transmission, distribution, and storage jobs and a 7% increase in the electric power generation sector. The motor vehicles and component sector has the most jobs, with 4% of the national total for the sector, and manufacturing is the largest proportion of motor vehicles jobs.





12. To access the USEER, visit https://www.energy.gov/policy/us-energy-employment-jobs-report-useer.

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