



TENNESSEE
VALLEY
AUTHORITY

FY 2022

Delivering Sustainable Solutions

Yesterday. Today. Tomorrow.





FORWARD-LOOKING STATEMENTS

This document contains forward-looking statements relating to future events and future performance. All statements other than those that are purely historical may be forward-looking statements. In certain cases, forward-looking statements can be identified by the use of words such as: may, will, should, expect, anticipate, believe, intend, project, plan, predict, assume, forecast, estimate, objective, possible, probably, likely, potential, speculate, aim, aspiration, goal, seek, strategy, target or other similar expressions. TVA believes that the assumptions underlying the forward-looking statements are reasonable. Numerous factors could cause actual results to differ materially from those in any forward-looking statements. For a discussion of these factors, please see the annual, quarterly and periodic reports that TVA files with the Securities and Exchange Commission. New factors emerge from time to time, and it is not possible for management to predict all such factors or to assess the extent to which any factor or combination of factors may impact TVA's business or cause results to differ materially from those contained in any forward-looking statement. TVA undertakes no obligation to update any forward-looking statement to reflect developments that occur after the statement is made.

Reporting: All references to years in this annual Sustainability Report refer to TVA's fiscal years ending September 30, unless specifically identified as calendar years. All financial data is reported in U.S. dollars. This report contains key measures of the progress being made and describes our strategies for the future. TVA is committed to continual improvement in reducing environmental impact and modernizing the electricity grid to support new technologies.

Publication Date: May 10, 2023
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Throughout its 90-year history, TVA has been focused on sustainability – by providing affordable, reliable energy; protecting air quality, waterways and public lands; and attracting investments and jobs that help bring prosperity to the region. TVA partners with 153 local power companies that supply electricity to about 10 million people, and it directly serves 58 customers. In collaboration with partners and stakeholders, TVA helps improve the quality of life across its seven-state service territory.

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Message from TVA's President & CEO



Nine decades ago, TVA was created with a clear mission to benefit the public good. To lift up a struggling region of our nation.

It's a mission that has stood the test of time. Today, the challenges are different, yet no less critical to the lives of those we serve.

Every day, we focus on our mission of energy

production, environmental stewardship and economic development – and these efforts are intertwined now more than ever. Sustainability underpins how we deliver on that mission.

When you ask people what sustainability means to them, you will likely get many different answers. People often think of it in terms of environmental performance, others in terms of social or community good works, while some point to financial stability or economic impact on communities.

At TVA, sustainability is all of the above. It's rooted in our unique, longstanding mission of service. It is part of our culture, and the fabric of TVA.

To us, sustainability is about ensuring our ability to provide the people of this region with affordable and reliable energy, a healthy environment, and a strong, prosperous economy – without compromising the ability of future generations to do the same.

TVA was established to not only serve this region, but also the nation by developing innovative solutions to solve complex challenges. By the nature of our mission, TVA fills a unique role as a leading electric utility and as a living laboratory – sharing potential solutions across the nation and the world.

TVA is a leader in carbon reduction, but we know there is more to do. We operate one of the nation's largest, most diverse and cleanest energy systems. More than half of our energy supply last year came from clean, carbon-free energy sources. And we have reduced carbon emission intensity by approximately 50% since 2005.

We are laying out a clear roadmap to drive to net-zero by 2050.

Our region's ability to continue to thrive – to attract new jobs and investments – requires a sustainable economy. And a sustainable economy requires affordable, reliable, resilient and clean energy supplied by TVA.

TVA is working to both supply that clean energy and partner with others to accelerate a clean energy economy through electrification across all sectors of the economy. TVA was established to serve the people of this region – every race, religion, gender, socioeconomic status and ability. And that's still what TVA is here to do.

TVA was "Built for All the People." That is the heart of our mission.

A handwritten signature in black ink, appearing to read "Jeff Lyash".

Jeff Lyash
President & CEO



Q&A with TVA's Chief Sustainability Officer

When it comes to sustainability, what sets TVA apart?

In 1933, at our beginning, we committed to improving the quality of life for our neighbors and communities by partnering to create a successful, sustainable region. We believe our mission of delivering affordable, reliable energy, protecting the environment and enabling economic development makes the region a better place. For our 10,000 employees across the seven-state region, these are points of pride.

Our sustainability work is focused in four areas:

- **Economic Impact:** Partnering to build the region's clean energy economy and providing affordable, reliable energy
- **Environment:** Stewarding the region's natural resources, including protecting the biodiversity that makes our region so unique and being a transformational leader in the fight against climate change
- **Social:** Serving the people and communities throughout the region and being a champion for inclusion everywhere
- **Governance:** Driving progress through accountability and transparency

What TVA accomplishments are you most proud of this year?

I am proud that we have implemented a Biodiversity Policy that is integrating biodiversity conservation into all levels of our operations. The tiny snail darter fish was on the endangered species list for years, and today, the species is flourishing thanks to our protection and work with partners. I also am proud of our growing Environmental Justice program, which is reaching out to communities and making a difference. And I am proud of how our efforts in carbon reduction are part of the clean energy economic development boom we're seeing in our region.



As Vice President of Environment and Chief Sustainability Officer, Rebecca Tolene leads TVA's sustainability efforts.

"In a changing world, TVA believes operating transparently, sustainably and with strong governance is not just good business; it is the foundation to building a brighter tomorrow."

Rebecca Tolene

Vice President of Environment and Chief Sustainability Officer

What does leadership in carbon reduction mean for TVA?

As we aspire to achieve net-zero carbon by 2050, we – together with partners – are aggressively pursuing both short-term and long-term solutions. The challenge and opportunity of the energy transition is clear – TVA must meet rapid growth in demand for electricity while quickly reducing the carbon emissions of our generation system. And delivering on our mission requires us to do this in a way that maintains reliable and affordable access to energy. Tackling these issues requires bold action, leadership and an integrated approach, which TVA has demonstrated throughout our 90-year history.

What is TVA doing to reduce carbon emissions?

No one technology or solution will meet all our aspirations so we must build and maintain a diverse generation system – inclusive of renewables, gas, nuclear, hydro, grid enhancements and storage – to rapidly reduce emissions today while ensuring energy security.

Renewable energy is an important tool as we lead the way in carbon reduction. Our actions begin with significant investments in renewable energy and our goal to deploy 10,000 megawatts of solar energy as quickly and affordably as possible. We continue to explore options to address the intermittency and power quality issues of this resource. Hydroelectric power, and TVA's work to increase energy from existing dams, will be a continued contributor of renewable energy. And we look to explore applications including pumped-storage hydroelectric power to support the grid, for example, at night when solar is not producing.

While we work to accelerate the growth of renewables, our new gas turbines – some of the most efficient in the world – will remain essential as we move away from coal-fired technologies. These assets enable renewables by ensuring overall system reliability. We are investing research and development into technology around hydrogen fuel and carbon capture, utilization and storage to further drive down carbon emissions.

Nuclear energy will continue to be a big part of TVA's strategy. We have made advances, including our ongoing work to explore the development and deployment of the first commercial, grid-scale small modular reactor (SMR) in the nation. SMRs represent the next generation of safe, carbon-free nuclear power. We are also working to deliver more clean power from our existing high-performing assets.

Investments in the grid are imperative to making the clean energy transition. Our new Primary System Operations Center will help ensure our grid is robust and able to deliver reliable energy, deploy new technology, and protect assets from cybersecurity risks and extreme weather. New technologies will be critical to our success, and we'll deploy them in concert with local power companies. Energy efficiency efforts will also reduce carbon emissions by reducing energy demand and helping residents and business owners lower their energy costs.

We are working relentlessly to improve our energy generation for a better environment and a more sustainable future. We are committed to reducing carbon emissions this decade, while innovating for the future as we strive for net-zero by 2050.

To achieve this, we will rely on our team's dedication, experience and innovation. To build a strong workforce, we are accelerating efforts to be an equitable, diverse and inclusive company. We are also working with labor

partners to create good jobs throughout the region that will help us build a clean energy economy.

I am so grateful to our team, customers and partners. Together, we'll strive to create a better future for all.

Clean energy sounds great, but how will TVA ensure its power is reliable?

Delivering affordable, reliable energy while making the clean energy transition is critical. While we continue to pursue innovative new technologies, we are committed to maintaining reliability in the near term.

The surge of economic development in our region, much of it associated with the nation's clean energy transition, has underscored the need to provide affordable, reliable power today. To accomplish that, TVA proactively invests in infrastructure and generation to ensure a secure energy future.

Between 2014 and 2022, TVA invested \$18 billion in capacity expansion and base capital, including about \$1 billion annually to maintain existing assets. We are building about 3,800 megawatts of new generation, including combustion turbines, solar projects, combined-cycle natural gas, and energy storage. TVA has contracted for over 2,300 megawatts of solar capacity, which is expected to come online by the end of 2023 and we support long-term local power company partners in deploying up to 2,000 megawatts of distributed solar.

The electricity grid must always balance demand with supply to maintain the integrity of the broader system. Issues around ensuring reliability include capacity (having enough generation), variable resources (electric generation that isn't always available), and seasonable mismatch (availability of generation in summer versus winter). We are working to solve these issues using additional diverse generation, storage, load balancing and transmission.

Building new capacity is crucial to maintaining reliability, enabling retirement of older, less clean resources, and meeting load demand growth. We need both margin in our planning and agility in our decision-making as we build the energy system of the future. It takes time to study, site, permit, source and build generation and transmission assets. To create flexibility and provide information for decision makers, we will begin several environmental studies with near-term and long-term options.

Due to issues around energy availability, seasonal mismatch and load balancing, there is a need on the grid for firm, dispatchable power in the near-term until future technologies – such as SMRs – can be deployed. This is one of the biggest issues facing the power industry today. TVA is working to address the region's near-term needs through demand response, energy efficiency, additional solar projects driven by our recent clean-energy RFP, enhancements or additions at existing or new gas sites, transmission upgrades to integrate renewables, and uprating hydro generation sites.

Why do a Sustainability Report?

In a changing world, TVA believes operating transparently, sustainably and with strong governance is not just good business; it is the foundation to building a brighter tomorrow.

Our sustainability program includes conversations with partners and stakeholders throughout the region. These conversations help us understand what our neighbors and partners want, incorporate what regulators expect, and determine a path forward.

Sustainability reporting, also called ESG reporting, is important to customers, potential employees, investors, contractors and stakeholders. TVA uses Global Reporting Initiative standards to meet the needs of stakeholders for comparable data. Our Sustainability Report provides a transparent look at our impact and opportunities.

Sustainability by the numbers

315,231

total tons of carbon avoided through TVA EnergyRight® programs

3.35 GWh

energy saved through energy efficiency improvements in TVA buildings; Top-ranked federal agency in the country for energy use intensity reduction against a 2003 baseline

449

total environmental outreach and stewardship projects sponsored across the region

97%

reduction in NO_x emissions from 1995

99%

reduction in SO₂ emissions from 1977

\$3 million

in estimated flood damage averted in 2022 alone

\$10.2 billion+

projected capital investments TVA helped attract

26K+ projected job creation

40K+ projected job retention

\$3 million

projected grant funding for 13 pilot projects between 2022 and 2024 through TVA's Connected Communities initiative

\$9 million+

donated in community contributions and disaster relief

Top 15

Best Employers in Tennessee by Forbes magazine in 2022 for the fourth consecutive year

For a bright tomorrow

Sustainability is focal point of projects

While it wasn’t called “sustainability” when TVA was founded in 1933, TVA has been focused on sustainability for the past 90 years.

Sustainability for TVA means ensuring its ability to provide the region with affordable and reliable electricity, a healthy environment and a prosperous economy – now and for future generations. Sustainable performance also prepares TVA for the changing regulatory landscape.

TVA aspires to achieve net-zero carbon emissions by 2050, and its innovative solutions and powerful partnerships with customers, communities and stakeholders move the needle closer to a clean energy future.

TVA’s leadership drives business strategy, which includes sustainability and risk-management decisions. The agency is integrating sustainability into corporate business plans and long-term strategy, and supporting business units as they include sustainability objectives and metrics in their planning.

TVA’s Chief Sustainability Officer oversees an enterprise-wide executive council and committee responsible for

sustainability governance and sits on the executive steering committee that manages risk.

TVA incorporates feedback from external advisory councils, communities and the public when making sustainability decisions. It adheres to federal requirements, including publishing disclosures such as the Climate Action Adaptation and Resiliency Plan and the Federal Sustainability Report and Implementation Plan.

TVA’s sustainability work is categorized into the four pillars listed below. Informed by input from stakeholders about the sustainability issues that matter the most to them, TVA has identified priority sustainability topics supporting each pillar. These priorities help focus TVA’s sustainability strategy.

To inform sustainability strategic planning, decisions and disclosure initiatives, TVA leverages industry-accepted frameworks, including the Global Reporting Initiative and Sustainability Accounting Standards Board standards. It also aligns with the United Nations Sustainable Development Goals (UN SDGs).

<div><div>Economic Impact</div><div><ul style="list-style-type: none">■ Energy Affordability■ Reliability and Resiliency■ Jobs Created and Retained■ Flood and Drought Management■ Energy Innovations■ Renewable Energy■ Investor Relations■ Supplier Partners</div></div>	<div><div>Environment</div><div><ul style="list-style-type: none">■ Climate Change and Resilience■ Air Quality■ Water Quality and Availability■ Waste Management■ Habitat and Biodiversity Protection■ Cultural Resource Management</div></div>	<div><div>Social</div><div><ul style="list-style-type: none">■ Health and Safety■ Environmental Justice■ Community Vitality and Engagement■ Reservoir and Stewardship Benefits■ Local Power Company Partnerships■ Diversity and Inclusion■ Labor Relations■ Recruitment, Development and Retention■ Skilled Workforce Availability</div></div>	<div><div>Governance</div><div><ul style="list-style-type: none">■ Transparency■ Board and Executive Diversity■ Systemic Risk Management■ Ethics■ Cyber and Physical Security■ Sustainable Financing Framework</div></div>
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TVA Mission, Strategic Priorities and Values

Our focus on sustainability strengthens our ability to safely provide affordable, reliable and clean energy; to engage in proactive stewardship of the Tennessee River system and natural resources; and to support sustainable economic growth. TVA’s mission has remained constant since our inception and focuses on three key areas:

Energy

We deliver affordable, reliable and clean power.

Environment

We provide responsible stewardship by caring for the region’s natural resources.

Economic Development

We create sustainable economic growth.

Strategic Priorities



People Advantage

Amplifying the energy, passion and creativity within us all.



Operational Excellence

Building on our best-in-class reputation for reliable service and competitively priced power.



Financial Strength

Investing in the future while keeping energy costs as low as possible.



Powerful Partnerships

Promoting progress through the shared success of our customers and stakeholders.



Igniting Innovation

Pursuing innovative solutions for TVA and our customers and communities.

Core Values



Safety

We are uncompromising in our commitment to the safety and well-being of our teammates and the communities we serve.



Integrity

We are honest and straightforward, always doing the right thing with integrity.



Inclusion


We treat everyone with dignity and respect, emphasizing inclusion by welcoming each person’s individuality so we can reach our potential.



Service

We are proud to be of service in the communities in which we live, work and play.




Aligning with UN Sustainable Development Goals

UN SD Goals	TVA Alignment	TVA Priority Issues
	<p>TVA understands that clean water is vitally important – for plants, animals and people. Managing the Tennessee River system means balancing the needs of diverse stakeholder interests – including power production, navigation, industry, agriculture, recreation, aquatic biodiversity and public supply – through periods of both flooding and drought. More than 5 million people get their water from the Tennessee River and its tributaries every day. TVA supports a broad range of initiatives to protect and improve water resources, ensure adequate water quality and maintain water supply.</p>	<ul style="list-style-type: none">Water Quality and AvailabilityHabitat and Biodiversity ProtectionFlood and Drought Management
	<p>TVA is in a unique position and has a responsibility to lead in developing solutions that will deliver a carbon-free energy future. As TVA works toward an aspiration of net-zero carbon emissions by 2050, it adheres to its original mission of generating affordable, reliable, resilient and clean energy. This is what customers and prospective customers deserve and expect. TVA EnergyRight® and TVA Green programs play a vital role in TVA's carbon leadership strategy while driving energy equity, efficiency and innovation. TVA is committed to building a greener future that leaves no one behind.</p>	<ul style="list-style-type: none">Energy AffordabilityRenewable EnergyLocal Power Company PartnershipsSustainable Financing Framework
	<p>TVA powers economic success by providing affordable, reliable, resilient and clean energy that attracts innovative industries, jobs and investments to the region. TVA also drives economic development through grants, partnerships and resources for STEM education, helping today's students build the skills needed for the workforce of tomorrow. TVA's commitment to bringing good jobs to the region starts with its own workforce. The strength of TVA is in its people – and TVA offers competitive wages, quality benefits, diverse career development opportunities and more to help ensure its team members have the support they need to Do Good Here.</p>	<ul style="list-style-type: none">Jobs Created and RetainedInvestor RelationsLabor RelationsRecruitment, Development and RetentionSkilled Workforce AvailabilityHealth and Safety

Though TVA strives to support achievement of all 17 UN SDGs, TVA has identified 10 that are most fundamental to its mission of service. The chart below presents alignment between these global goals and TVA's sustainability priorities, aspirational goals and progress in FY 2022. [Appendix D](#) shows TVA's alignment with the remaining seven UN SDGs.

TVA Aspirational Goals	FY 2022 Actions
<ul style="list-style-type: none">Continue to Improve Integrated Environmental Footprint (Air, Water, Waste, Land, Biodiversity)Continue to Protect the Tennessee River System's Natural Habitats and BiodiversityContinue to Support \$12 Billion in Sustainable Recreational Activities on Public Lands and Waters	<ul style="list-style-type: none">Prepared Water Use in the Tennessee Valley Report to inform reservoir operating policy\$700,000 dedicated annually to environmental stewardship programs to protect and improve aquatic biodiversitySupported the recovery of the snail darter and its removal from the endangered species list in 2022 through long-term policies to improve water quality and aquatic habitat and maintain adequate reservoir flowsIssued more than 1,800 Section 26a permits to protect land and shoreline resources while supporting access to public lands and waters
<ul style="list-style-type: none">Continue Delivering Affordable Electricity RatesExecute Strategy to Build the Clean Energy System of the Future (with path to ~80% carbon reduction by 2035 and aspiration of net-zero by 2050)Add 10,000 Megawatts of Solar by 2035 to Meet Customer Demand and TVA System NeedsIncrease Investment in Energy Efficiency for Underserved Residents and Communities	<ul style="list-style-type: none">Continued to be cleanest power system in the Southeast as a percent of net generation*Kept residential rates lower than 70% of the top 100 U.S. utilities and industrial rates lower than more than 90% (based on Sept. 30, 2022, 12-month rolling average from U.S. Energy Information Administration)Helped avoid more than 315,000 tons of carbon through TVA EnergyRight® programs, with 50,947 people participatingProvided energy efficiency upgrades to 1,543 homes through TVA EnergyRight's Home UpliftCompleted the first renewable energy projects through TVA Green Invest, including the largest solar farm in Alabama
<ul style="list-style-type: none">Continue to Attract and Grow Investments and Jobs that Power the Region's EconomyCreate a Talent-Focused Organization that Delivers Performance and ServiceEnhance Safety and Well-Being of TVA Employees and the People of the RegionAdvance Employee and Community Workforce Development	<ul style="list-style-type: none">Projected capital investments of over \$10.2 billion that are expected to create 26,512 jobs and retain 40,027 jobsRecognized as a Top Utility for Economic Development for the 17th consecutive yearContributed more than \$1 million in STEM grants and other education programs for schools across the regionNamed in Top 15 Best Employers in Tennessee for fourth consecutive yearContinued strong tradition of partnership with 17 labor unions representing 58% of the TVA workforceTop quartile performance in recordable injury rate and top decile performance in serious injury incident rate

*Clean power includes all nuclear, hydroelectric and renewable generation and renewable purchased power sources. Based on Edison Electric Institute's June 2022 reporting database.

UN SD Goals	TVA Alignment	TVA Priority Issues
	<p>TVA’s long history of leadership in developing and delivering new ideas and innovative solutions provides an opportunity to bring these investments to the region and build on that track record of excellence. The Energy System of the Future is being designed to help reinforce reliability, protect the environment and keep power costs low with a diverse portfolio of clean energy sources, advanced technologies and broad electrification. Elements critical to this success include investments in energy storage integration, electric vehicle evolution, decarbonization options, Connected Communities, regional grid transformation, and advanced nuclear solutions. TVA is investing in the future today.</p>	<ul style="list-style-type: none">▪ Energy Innovations▪ Reliability and Resiliency▪ Cyber and Physical Security
	<p>Inclusion is a core value at TVA, and it continuously works to integrate Inclusion with Diversity within its own workforce and in the communities it serves. TVA helps reduce economic inequality through initiatives such as its Supplier Diversity program, which ensures small, local and diverse companies have equitable opportunities to compete for TVA contracts. TVA is also creating more structure around its Environmental Justice work to address disproportionate health, environmental, economic and climate impacts on disadvantaged communities. In alignment with federal guidance, TVA has taken steps to identify and address potential barriers to accessibility in these and other programs to ensure equal opportunity.</p>	<ul style="list-style-type: none">▪ Diversity and Inclusion▪ Supplier Partners▪ Board and Executive Diversity▪ Environmental Justice
	<p>TVA is part of every community it serves, and it invests in communities to make the future better. Together with its partners, TVA is building resilient, Connected Communities through programs that power equitable economic development, provide support in the wake of disasters, and drive thriving ecotourism and recreation along waterways. TVA understands the significant benefits green and public spaces provide for human health and community well-being, and ongoing environmental education and outreach initiatives help make sure everyone has the opportunity to enjoy the 293,000 acres of public land TVA holds in trust.</p>	<ul style="list-style-type: none">▪ Community Vitality and Engagement▪ Local Power Company Partnerships▪ Reliability and Resiliency▪ Cultural Resource Management

TVA Aspirational Goals	FY 2022 Actions
<ul style="list-style-type: none">▪ Build the Integrated and Reliable Grid of Tomorrow by 2027▪ Partner to Develop New Clean Energy Technologies for Deployment in the 2030s and Beyond▪ Develop and Deploy a Small Modular Reactor through Federal Partnership▪ Become the Nation’s Top-Performing Nuclear Fleet by 2025▪ Pave the Way for More Than 200,000 Electric Vehicles on Valley Roads by 2028▪ Provide Reliable and Resilient Power in the Energy System of the Future (Continue 99.999% Reliability)	<ul style="list-style-type: none">▪ Joined a coalition of utilities to create the Southeast Hydrogen Hub to accelerate carbon reduction▪ Partnered with Ontario Power Generation to develop advanced nuclear technology as an integral part of the clean energy future▪ Received the 2022 Nuclear Energy Institute Top Innovative Practice Award for TVA’s commitment to safety, cost-savings and industry leadership▪ Launched the Fast Charge Network program with LPCs, TDEC and other state partners to ensure that electric vehicle drivers in the Tennessee Valley will never be more than 25 miles from a charging station▪ Partnering with DOE, EPRI, national labs and others on initiatives to drive advancement of carbon capture, alternative fuels and advanced storage technologies
<ul style="list-style-type: none">▪ Accelerate Impact of Inclusion with Diversity within TVA and the Communities It Serves▪ Enhance Supplier Diversity Program Support for Women-Owned, Minority-Owned and Veteran-Owned Businesses▪ Maintain “Top 10” Ranking for Military-Friendly® Supplier Diversity Program▪ Prioritize Social and Environmental Justice for Impacted Communities	<ul style="list-style-type: none">▪ Received multiple awards for TVA’s focus on building an inclusive culture, including DiversityInc’s Top Companies for Utilities Award and the Urban League of Greater Chattanooga’s Inclusion by Design Award▪ Spent \$518 million with diverse businesses, \$1.1 billion with small businesses, and \$2 billion with Valley businesses▪ 2022 Military Friendly Supplier Diversity Program Award – Ranked No. 1; Top 10 three years in a row▪ Created a multidisciplinary Environmental Justice core team and a broader Environmental Justice Regulatory and Policy Team for enterprise-wide perspective and coordination▪ Published a DEIA Report that includes many workforce metric highlights
<ul style="list-style-type: none">▪ Strengthen Partnerships and Volunteer in Communities as Part of TVA’s Mission of Service▪ Prioritize Social and Environmental Justice for Impacted Communities▪ Maintain “Best in the Nation” Status on Flood Management and 99.999% Transmission Reliability▪ Continue to Support \$12 Billion in Sustainable Recreational Activities on Public Lands and Waters	<ul style="list-style-type: none">▪ Established 13 Connected Communities pilot projects leveraging tech and data-driven solutions, from addressing technological disparity in Columbus, Mississippi, to driving equitable STEM education in East Tennessee▪ Founding member of the Tennessee RiverLine partnership, which aims to connect communities along the 652 miles of the Tennessee River for a projected economic impact of \$104 million annually▪ Provided customers a total of \$449 million through Pandemic Relief Credits in FY 2021 and Pandemic Recovery Credits in FY 2022▪ Continued to protect approximately 12,500 archaeological sites on TVA-managed land▪ Sponsored 449 outreach and stewardship projects across the region

UN SD Goals	TVA Alignment	TVA Priority Issues
	TVA believes in walking the walk of sustainability, starting with its own facilities. That’s why it maintains a nationally recognized Internal Energy Management Program to make sure it is identifying, funding and implementing energy and water conservation projects in TVA buildings. TVA is committed to sustainability and continuous improvement, proactive stewardship in managing natural resources and its environmental footprint, and maintaining compliance with all applicable environmental and legal requirements. TVA expects its suppliers to share this commitment to responsible production, as detailed in the Supplier Code of Conduct.	<ul style="list-style-type: none">▪ Energy Innovations▪ Air Quality▪ Water Quality and Availability▪ Waste Management▪ Supplier Partners
	TVA’s aspiration is to achieve net-zero carbon emissions by 2050 and support broader national efforts to create a clean energy economy. As severe weather events like storms, droughts and floods become more frequent and extreme, TVA’s climate change adaptation planning allows it to operate in a secure, effective and efficient manner in a changing climate. In the aftermath of natural disasters, TVA rallies to help impacted communities – by restoring power and by joining community members to distribute food and water, clean up and rebuild.	<ul style="list-style-type: none">▪ Climate Change and Resilience▪ Flood and Drought Management▪ Reliability and Resiliency▪ Systemic Risk Management
	The TVA service area is home to a vast array of plant and animal species, some of which occur nowhere else on the planet. Environmental stewardship is part of the mission with which TVA was charged in 1933, and the enterprise continues to recognize the importance of biodiversity to the quality of life of the region’s residents. TVA works to proactively protect biodiversity through stewardship of public lands, management of the Tennessee River system, local and regional partnerships, and the integration of species and habitat conservation into project planning.	<ul style="list-style-type: none">▪ Reservoir and Stewardship Benefits▪ Air Quality▪ Water Quality and Availability▪ Waste Management▪ Habitat and Biodiversity Protection
	TVA is foremost a public power company, and it serves the public interest. Earning and maintaining stakeholders’ trust is integral to fulfilling TVA’s mission of service, and it has been since 1933. TVA’s first Code of Ethics, written and distributed less than 60 days after its establishment, stated: “The affairs of the Tennessee Valley Authority shall be conducted in all respects with honesty and openness.” Today, TVA remains committed to transparency and accountability. We expect every employee, contractor and supplier to embrace and uphold our core values of Integrity , Safety , Inclusion and Service .	<ul style="list-style-type: none">▪ Ethics▪ Transparency▪ Investor Relations▪ Supplier Partners▪ Local Power Company Partnerships

TVA Aspirational Goals	FY 2022 Actions
<ul style="list-style-type: none">▪ Continue to Improve Integrated Environmental Footprint (Air, Water, Waste, Land, Biodiversity)▪ Achieve 100% Sedan and SUV Electric Fleet by 2030▪ Execute Strategy to Develop the Clean Energy System of the Future (with path to ~80% carbon reduction by 2035 and aspiration of net-zero by 2050)	<ul style="list-style-type: none">▪ Recognized by the Federal Energy Management Program as the top-ranked federal agency in the country for reductions of building energy use intensity against a 2003 baseline▪ The TVA vehicle fleet now has 78 Plug-in Electric Vehicles; TVA plans to purchase more than 1,100 EVs by FY 2030▪ Reduced emissions of NO_x by 97% and SO₂ by 99% from historic peaks in 1995 and 1977, respectively▪ Recycled 82% of coal combustion residuals (CCR) produced▪ \$25.4 million spent on purchase order lines compliant with federal sustainable procurement goals in FY 2022
<ul style="list-style-type: none">▪ Enhance Climate Adaption Planning to Improve Overall Resiliency for the Region▪ Reduce Carbon Emissions by Approximately 80% by 2035▪ Aspire to Net-Zero Carbon Energy by 2050 While Maintaining Low Costs and Reliability▪ Maintain “Best in the Nation” Status on Flood Management and 99.999% Transmission Reliability	<ul style="list-style-type: none">▪ Hosted the Tennessee Valley Regional Resiliency Summit, providing a platform for key stakeholders to share perspectives and collaborate on the future of resiliency▪ Continued partnership to implement the Sentinel Monitoring and Aquatic Ecology Management programs to improve understanding and drive action to mitigate climate impacts on aquatic resources▪ Began the Valley Pathways Study in 2023, a project in partnership with the University of Tennessee’s Baker Center that will look at all sectors of the economy to accelerate the region’s clean energy future▪ Issued a request for proposal for up to 5,000 megawatts of carbon-free energy that must be operational before 2029, which is one of the largest clean energy procurement requests in the nation▪ Prevented an estimated \$3 million in flood damage along the Tennessee River in 2022, with \$9.7 billion avoided in the Valley and along the Ohio and Mississippi rivers in TVA’s recorded history
<ul style="list-style-type: none">▪ Continue to Improve Integrated Environmental Footprint (Air, Water, Waste, Land, Biodiversity)▪ Continue to Protect the Tennessee River System’s Natural Habitats and Biodiversity▪ Continue to Support \$12 Billion in Sustainable Recreational Activities on Public Lands and Waters▪ Partner with Communities and Conservation Partners to Plant 1 Million Trees	<ul style="list-style-type: none">▪ Implemented the TVA Biodiversity Policy, supporting biodiversity investments in TVA projects and community support partnerships▪ Supported pollinators like bees and butterflies through integrated vegetation management on TVA rights-of-way and establishing native plant gardens at TVA sites▪ Removed 166 tons of litter from land and water in cleanup events involving almost 5,000 volunteers▪ Planted more than 3,000 feet of streambank vegetation to reduce erosion, protect water quality and support aquatic biodiversity▪ Engaged with 3,800 children through outreach and environmental education programs
<ul style="list-style-type: none">▪ Prioritize Social and Environmental Justice for Impacted Communities▪ Create a Talent-Focused Organization That Delivers Performance and Service▪ Enhance Safety and Well-Being of TVA Employees and the People of the Valley	<ul style="list-style-type: none">▪ First federal agency in the nation to earn the Compliance Leader Verification™ designation from Ethisphere®▪ Refreshed and reaffirmed the TVA Employee Code of Conduct, Executive Code of Conduct and Supplier Code of Conduct; and the TVA Board of Directors adopted a Board Code of Conduct▪ Achieved the highest score on the Voice of the Customer Survey recorded in the survey’s history, reflecting TVA’s strong customer partnerships▪ Offered numerous opportunities for public input, including through public listening sessions before every Board meeting, through meetings with two independent stakeholder advisory councils, and during the National Environmental Policy Act review process for every major TVA action

Carbon reduction leadership



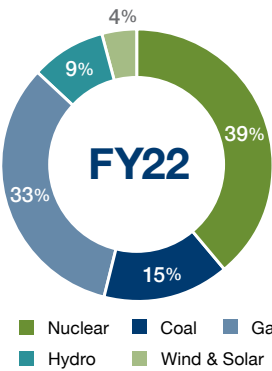
Yesterday

TVA has been producing renewable energy from the moment the TVA Act was signed and one of the world’s great hydropower systems got its start. As the region grew, TVA evolved, building fossil-fueled power plants in the industrial age of 1950s and some of the nation’s earliest nuclear reactors in the 1960s. For nine decades, TVA’s diverse generation portfolio and commitment to innovation has delivered affordable, reliable and resilient power.

Today

TVA operates the cleanest energy system in the Southeast as a percent of net generation. TVA has made significant investments modernizing the generation fleet, including retiring aging coal units, adding modern gas generation and investing in TVA’s industry-leading transmission system.

Today, more than half of TVA’s energy supply comes from carbon-free sources. Yet TVA aims to go further, faster to build the energy system of the future.



Tomorrow

TVA’s aspiration is to achieve net-zero carbon emissions by 2050 while supporting broader national efforts to create a clean energy economy.

Meeting this aspiration will require partnership, innovation and continued investment in new technologies. TVA is working to add 10,000 megawatts of solar capacity to its system and investing in a diverse suite of options for further carbon reduction – including advanced nuclear reactors, alternative fuels, energy storage and an extensive hydro fleet.

The path to net-zero is not linear, and TVA’s carbon reduction efforts have been challenged by factors including rapid electricity demand growth in the service region and supply chain constraints. TVA is staying the course, working with its partners to meet challenges and opportunities without compromising affordability or reliability.

The clean energy transition is a defining challenge of today’s electricity sector, but in 90 years, there has never been a challenge too big for TVA.

Carbon Reduction Snapshot



Metric	FY 2020	FY 2021	FY 2022	FY 2022 Highlights
Power From Carbon-Free Sources Delivered (%)	57%	56%	52%	Fluctuations in year-over-year carbon emissions numbers are expected as TVA works toward its aspirational goal of net-zero by 2050. TVA recognizes the challenges and opportunities presented by the clean energy transition.
CO ₂ Emissions Rate (lbs/MWh) (CY)	561.92	637.67	658.06	
TVA CO ₂ Tons From Owned Generation (Metric tons) (CY)	34,237,908	38,437,510	38,966,496	TVA is a top-ranked federal agency in the nation for its progress in reducing the energy use intensity of its buildings. Internal energy management helps TVA meet federal sustainability goals, lower costs and reduce carbon emissions.
Building Energy Intensity progress (% Reduction from FY 2003: Btu/GSF)	67.60%	74.80%	76.40%	
Scope 1 and 2 GHG Emissions (% Reduction from 2008) (EO 14057)	51.00%	58.40%	64.1%	
Reliability Rating (Transmission System) (%)	99.999%	99.999%	99.999%	TVA continues to prioritize affordability, reliability and resiliency as it works toward the clean energy system of the future – as customers and prospective customers deserve and expect.
Non-Fuel Delivered Cost of Power (cents/kWh)	3.20	3.22	3.18	
Incremental Annual Electricity Savings from EE (MWh) (CY)	101,138	19,777	37,708	

Yesterday and today

TVA shows commitment to reducing emissions

Imagine living in a place deemed the dirtiest city in the world.

That's the description given of Knoxville, Tennessee, in 1935 by columnist Ernie Pyle.

While Pyle singled out Knoxville, air pollution in the Tennessee Valley region seemed to be a fact of life for years before the TVA got its start as an agency focused on energy, environmental stewardship and economic development. Wood and coal smoke from residences and factories polluted cities, while windblown soil and forest fires clogged the air in rural areas.

And when the Post-World War II industrial revolution ramped up, TVA's original green hydroelectric dams that dotted the landscape couldn't keep up with the demand for energy. To meet the needs of its communities, TVA constructed a series of fossil-fueled power plants.

By 1969, Chattanooga, Tennessee, earned the title of being the dirtiest city in America – this time by CBS anchor Walter Cronkite. A federal agency said the city had the worst particulate air pollution in the nation.

With improved technology on its side, TVA reduced emissions from its power plant stacks. The agency closely monitored stack emissions and researched innovative ways to improve air quality.

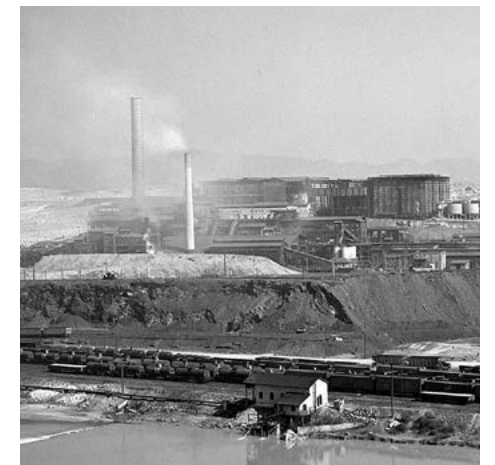
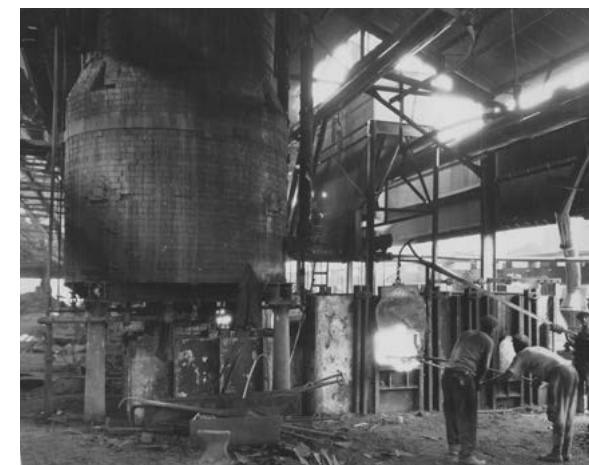
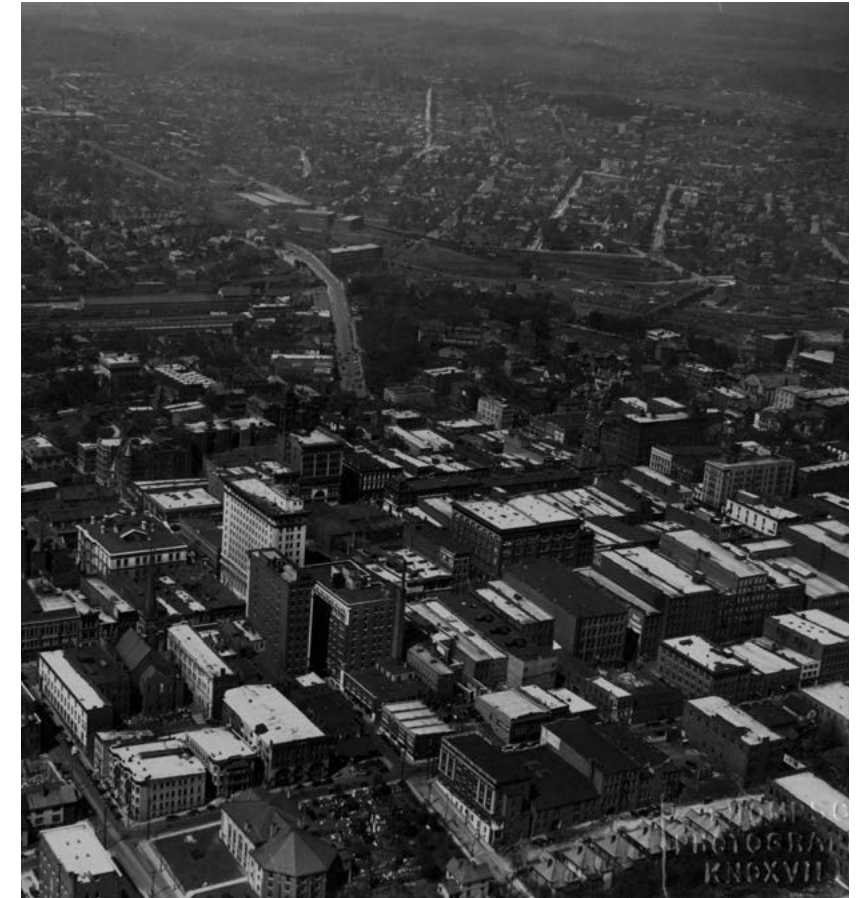
And at the dawn of the commercial nuclear age, TVA built some of the earliest nuclear reactors. These reactors were followed by others, all generating the megawatts needed to fuel a diverse and clean energy future for the region.

Today, TVA has one of the most aggressive clean air control programs in the nation. Emphasis has moved away from traditional coal-based production and toward cleaner forms of generation.

More than half the energy TVA delivers is carbon-free, and federal data shows Tennessee is the top state in the nation for reducing carbon intensity.

TVA aims to go faster and further along its aspirational path to net-zero. It is partnering with others to innovate with new forms of technology – small modular reactors, battery storage, solar, hydrogen – to lead the nation toward a secure energy future.

Today, TVA has one of the most aggressive clean air control programs in the nation. Emphasis has moved away from traditional coal-based production and toward cleaner forms of generation.



Clockwise from top left: Refueling Watts Bar Unit 1 in 1995 to provide clean energy; Aerial view of downtown Knoxville in the 1920s to 1930s; Copper plant industry in Copperhill, Tennessee, in 1942; Interior of Knoxville Iron Company as three men operate a foundry in the 1920s; View of Widows Creek Fossil Plant showing high stack and precipitators in 1977; and erosion in copper basin in Copperhill, Tennessee, in 1942.



‘We must do more’

TVA leads nation toward a clean energy future

Carbon reduction is, undoubtedly, one of today’s most pressing issues.

TVA takes the challenge very seriously. It operates one of the largest, cleanest and most diverse energy systems in the country, with more than half its energy supply coming from carbon-free energy sources.

“But we must do more,” said Jeff Lyash, TVA President and CEO. “If we want to go further, faster in our pursuit of a clean energy economy, we must work together across all sectors.”

That’s why, in February 2023, TVA announced a partnership with the Baker Center for Public Policy – a non-partisan think tank at the University of Tennessee – to look at all segments of the economy, not just the power industry, to find ways everyone can reduce emissions and move the region toward a secure energy future.

Together, TVA and the Baker Center will conduct the “Valley Pathways Study on Building a Clean, Competitive Economy.” The study will develop a baseline for where carbon emissions are across the region, then will identify pathways for all sectors to work toward a net-zero future.

“The Tennessee Valley is fortunate to have several possible paths for achieving its decarbonization goals,” said Charles Sims, Baker Center Energy and Environment program director. “We look forward to working with all those involved to better understand the broader Valley’s opportunities, needs and challenges.”

Recognizing the important role TVA plays in the drive to cleaner energy, TVA has reduced carbon emissions intensity by roughly 50% against the CY 2005 benchmark. In May 2021, the TVA Board endorsed its [“Strategic Intent and Guiding Principles”](#) document, which sets a clear

TVA is working toward 10,000 MWs of solar energy capacity by 2035.



TVA has installed solar-powered EV chargers at its sites.

framework for its carbon reduction strategy. The agency sees a path to about 80% reduction by 2035, leveraging new and existing technology.

TVA’s plan to achieve these carbon intensity reductions is challenged by factors such as rapid electricity load growth in the region and supply chain and labor constraints, but TVA is staying the course and working to overcome these challenges as it continues to work toward achieving net-zero carbon emissions by 2050.

TVA is focused on innovative projects and partnerships in new nuclear, renewable energy, energy storage and hydrogen. It is supporting the electrification of vehicles using increasingly clean energy to support broader decarbonization of the region.

The agency is working aggressively toward 10,000 megawatts of solar energy capacity by 2035.

TVA’s upcoming Integrated Resource Plan will provide a roadmap for how TVA will best be able to maintain affordability and reliability while reducing carbon emissions.

“TVA is outcome-focused and there is no single answer to reducing carbon emissions,” Lyash said. “Our path to a clean energy future may not always be linear, but our end goal is to follow a defined strategy to accelerate the process and expand carbon-free technologies that will power our nation’s sustainable clean energy economy without impacting reliability, resiliency or affordability.”

Guiding principles

While TVA builds the energy system of the future, its guiding principles are:

Prioritize the needs of Valley stakeholders — maintain **affordability** and **reliability**

Use the best available science and support **research**

Partner with customers and communities on economy-wide **electrification**

Realize that **nuclear** and **hydro** generation and a **strong transmission grid** are crucial

Be **transparent** with stakeholders in measuring and sharing progress and **listen** and work effectively

Adapt and be willing to **change** as technology advances

Delivering value

Focus on new nuclear

TVA views advanced nuclear technology as a significant component of its carbon reduction efforts.

Under its New Nuclear Program, TVA is partnering with utilities, national laboratories, universities and private companies to explore advanced nuclear technology options, including small modular reactors (SMRs).

SMRs offer reliable, resilient, carbon-free power. And with a smaller footprint than a traditional nuclear plant, SMRs also offer more flexibility, improved safety and security, and reduced operating costs.

TVA has the nation's first early site permit for SMRs from the Nuclear Regulatory Commission (NRC) for the Clinch River Nuclear Site in Oak Ridge, Tennessee. TVA is preparing an NRC construction permit application for a light-water SMR at the site, subject to required environmental reviews and Board approval.

Through a technical collaboration agreement, TVA, Ontario Power Generation and Synthos Green Energy are investing in the design development of the GE Hitachi BWRX-300 SMR. TVA is considering the BWRX-300 for potential deployment at the Clinch River Nuclear Site.

TVA has experience with nuclear energy. It operates the nation's third-largest nuclear fleet, which meets approximately 40% of the energy needs of TVA's service territory. And its nuclear performance helps ensure that power is affordable, reliable and clean.

TVA achieved Industry Top Quartile Nuclear Fleet Performance in 2022.



For illustrative purposes only.

TVA is exploring advanced nuclear technology options for a small modular reactor at the Clinch River Nuclear Site as one of several technologies for achieving TVA's long-term goals.

Hydrogen Hub Partnership

The Southeast Hydrogen Hub coalition was among a limited number of organizations encouraged by the U.S. Department of Energy to submit a full application in response to \$8 billion in funding available for hydrogen hubs under the Infrastructure Investment and Jobs Act.



The coalition – which includes TVA, Dominion Energy, Duke Energy, Louisville Gas and Electric Company, Kentucky

Utilities Company, Southern Company, and Battelle – submitted its formal proposal in spring 2023, with decisions expected in the fall.

Hydrogen is attractive as an energy resource because it has immediate potential to accelerate carbon reduction across the Southeast and across all sectors of the U.S. economy – including transportation.

TVA anticipates the Hub will build on existing infrastructure utilizing advancing technologies to enhance the production, storage, transport and delivery of hydrogen as part of a transition to a clean energy economy.

Innovative solar solution

To accelerate its drive toward a sustainable, clean energy future, TVA plans to conduct an innovative solar pilot project at its Shawnee Fossil Plant near Paducah, Kentucky.

Pending environmental and regulatory reviews, the Shawnee project will be a first-of-its-kind pilot to repurpose a closed coal-ash site for utility-scale solar projects.

The plan calls for using Closure Turf®, a synthetic turf system, to cover the coal-ash landfill.

Then, TVA will construct a 100-mega-watt solar site on top of turf – which will be enough to power 16,615 homes.

This pilot project demonstrates how TVA is moving to a clean energy future while building on the legacy of the past.

By building solar installations on retired fossil sites, TVA is preserving agricultural land and open spaces. These installations also make good use of existing transmission infrastructure.



TVA plans to repurpose a closed coal-ash site with a turf system and solar.



For illustrative purposes only.



TVA is committed to increasing its use of solar energy.

Moving toward a cleaner future

TVA made one of the largest clean energy procurement requests in the nation when it requested proposals for up to 5,000 megawatts of clean energy in July 2022. It is currently evaluating the bids and will announce the results later in 2023.

“This request for proposal is a clear signal to our industry, our partners and our nation that we need to move further and faster, together, to make a cleaner future a reality,” said Jeff Lyash, TVA President and CEO.

“TVA fills a unique role as one of the nation’s leading electric utilities but also a living laboratory. We were established not only to serve this region, but also the nation – by developing innovative solutions to solve complex problems.”

Jeff Lyash, TVA President and CEO

Path forward in carbon reduction

The table below was originally published in [TVA's 2021 Carbon Report](#). The final column, which is new, shows TVA's FY 2022 progress in these areas.

	2020 Accomplishments	Five-Year Actions — Set in 2020
<div>ENERGY TECHNOLOGY INNOVATION</div> <div><i>New technologies for a net-zero future</i></div> <div><div><div>■ Advanced nuclear</div><div>■ Next generation storage</div><div>■ Hydrogen</div><div>■ Carbon capture, utilization and storage (CCUS)</div><div>■ New hydroelectric such as pumped storage</div></div></div>	<div><div>■ Early site permit for Small Modular Reactor (SMR) at Clinch River Nuclear Site</div><div>■ Founding member of the Electric Power Research Institute Low-Carbon Resources Initiative</div><div>■ Contracted for 1,178 megawatts of utility-scale solar generation to the region by the end of FY 2020</div><div>■ Early analysis of pump-back options at hydro facilities</div></div>	<div><div>■ Lead the identification of technologies that advance net-zero electricity</div><div>■ Identify technology and partnership for Clinch River SMR</div><div>■ Battery-storage demonstration project at Vonore, Tennessee, that is expected to be online in 2023</div><div>■ Long-duration storage pilot project</div></div>
<div>VALLEY INNOVATION</div> <div><i>Being a catalyst for economy-wide carbon reduction</i></div> <div><div><div>■ Transportation electrification</div><div>■ Smart communities</div><div>■ Energy efficiency</div><div>■ Electrification</div><div>■ Supplier sustainability</div></div></div>	<div><div>■ Electric rates that are priced below 70% of America's other Top 100 utilities</div><div>■ Developed electric vehicle roadmap with partners</div><div>■ New power rates to help support development of electric vehicles</div><div>■ TVA Green Programs offer customers renewable energy options</div><div>■ Working with LPCs on programs that help customers manage their energy usage and bills through efficiency</div><div>■ Efficient electrification to support lower carbon footprint</div></div>	<div><div>■ TVA's Fast Charge Network for Electric Vehicles</div><div>■ Support Tennessee Valley in emerging as one of the top regions in America for manufacturing electric vehicles</div><div>■ Enable local power companies to generate up to 5% of their energy load through renewable and other sources</div><div>■ Continued energy efficiency to support low-income homes and efficient electrification</div><div>■ Work with regional suppliers to understand carbon levers in the supply chain</div></div>

Long-term Actions — Set in 2020	Progress through FY 2022
<div><div>■ Clinch River SMR developed through partnerships; other advanced nuclear exploration</div><div>■ Additional large-scale batteries or storage projects online</div><div>■ Test or demonstrations of carbon capture, renewable natural gas or hydrogen with subsequent development</div><div>■ Pumped storage/new technology hydro addition</div></div>	<div><div>■ Received the 2022 Nuclear Energy Institute Top Innovative Practice Award for TVA's commitment to safety, cost-savings and industry leadership.</div><div>■ Established New Advanced Nuclear Program that will prepare an NRC construction license for a light-water, small modular reactor at the Clinch River Nuclear Site.</div><div>■ Partnered with Ontario Power Generation to develop advanced nuclear technology as an integral part of the clean energy future.</div><div>■ Joined the Kairos Power Operations, Manufacturing and Development Alliance consortium to advance the development of advanced fluoride salt-cooled high-temperature reactor technology.</div><div>■ Established a new research partnership with U.S. Department of Energy's Oak Ridge National Laboratory to advance decarbonization technologies from discovery through deployment.</div><div>■ Electric Power Research Institute Low Carbon Resources Initiative – 20-plus government-funded projects initiated; 50-plus technical reports published; Low-carbon hydrogen accelerator launched.</div><div>■ TVA and utility partners formed the Southeast Hydrogen Hub coalition. The coalition received encouragement from the Department of Energy to apply for funding to implement hydrogen projects to accelerate carbon reduction.</div><div>■ The battery at Vonore will be TVA's first owned and operated grid-scale project. This battery system will use lithium-ion batteries to store 40 MWh of energy— enough electricity to power 11,000 homes for three hours.</div><div>■ TVA secured 150 MWs of battery storage in conjunction with Green Invest solar projects.</div></div>
<div><div>■ More than 200,000 electric vehicles in the Tennessee Valley region by 2028</div><div>■ Mass transit support</div><div>■ Demonstration projects to aggregate electric vehicles and chargers into resource pool</div><div>■ Additional demand response</div><div>■ Evaluate use of coal combustion residuals materials to de-carbonize concrete production</div><div>■ Incorporate environmentally friendly policies and metrics into existing sourcing and procurement practices</div></div>	<div><div>■ The Fast Charge Network is a program with LPCs, TDEC and other state partners to ensure that electric vehicle drivers in the Tennessee Valley region will never be more than 25 miles from a charging station. Currently, 116 of TVA's 153 LPC partners are interested in the Fast Charge Network program. At the end of FY 2022, 32 charging sites were under contract with 26 different LPCs, and four are in operation.</div><div>■ Five auto manufacturers are focused on EV production in the region: Ford (future electric pickup truck), GM (Cadillac Lyriq), Volkswagen (ID4), Nissan (Leaf) and a Mazda-Toyota joint venture.</div><div>■ As of Sept. 30, 2022, 52 LPCs have requested or signed onto the new wholesale EV rate.</div><div>■ TVA's internal fleet electrification program is among the most aggressive in the electric utility industry. By 2030, TVA plans to transition 100% of light-duty vehicles and 50% of medium-duty vehicles to electric.</div><div>■ Established 13 Connected Communities pilot projects leveraging tech and data-driven solutions, from addressing technological disparity in Columbus, Mississippi, to driving equitable STEM education in East Tennessee.</div><div>■ Upgraded more than 4,300 homes through TVA Home Uplift since 2018 for low-income residents – helping them save as much as \$500 a year on their power bills.</div><div>■ TVA's School Uplift helps public schools cut energy waste and engage students, faculty and staff to save energy. TVA invests, on average, \$3.2 million in the program each year. School Uplift helps up to 100 schools each year.</div><div>■ Completed the first renewable energy projects through TVA Green Invest, including the largest solar farm in Alabama.</div><div>■ The Green Connect network has 19 qualified installers, +1,000 customers registered, ~200 installations submitted, and 65 installations verified.</div></div>

	2020 Accomplishments	Five-Year Actions — Set in 2020
<div><div>FLEET INNOVATION</div><div><i>Creating more carbon reductions with TVA's existing fleet</i></div><div><ul style="list-style-type: none">Improving nuclear performanceNuclear license extensionImproving and extending hydro performanceAddition of current solar technology (and more as storage technology advances)Evaluate retirement of additional coalFlexible low-carbon gas capacityTVA building/fleet performance</div></div>	<ul style="list-style-type: none">Diverse generation mix that provides reliable and affordable energy and positions TVA well for the futureMaintained carbon-free nuclear plants and improved outage performanceContinued to invest in new solar through nationally recognized renewables programTVA has an Internal Energy Management Program and completed energy efficiency improvements, saving enough energy to power 50,000 average homes for a yearRetired or announced the retirement of nearly 60% of TVA's coal units	<ul style="list-style-type: none">Additional renewable energyContinue to develop and match large-scale solar, with storage options, to large business and industrial customers through TVA's award-winning Green Invest programIncrease investment in existing hydro assets to optimize performance and extend lifeNew flexible gas brought online to support renewablesClimate change considerations embedded into established business practicesInvesting in the current nuclear fleet to improve nuclear performanceIncrease TVA fleet procurement of electric vehicles
<div><div>ENERGY DELIVERY INNOVATION</div><div><i>Reducing carbon emissions by finding innovative ways to deliver power</i></div><div><ul style="list-style-type: none">Optimizing system operationsModernizing the transmission gridEnergy delivery market efficiencies to optimize renewablesSoutheast Energy Exchange MarketMarket and load shape strategies</div></div>	<ul style="list-style-type: none">99.999% reliable powerSupport the development of a regional energy exchange marketTechnology-enabled right of way management	<ul style="list-style-type: none">Complete construction of new System Operations CenterMarket enabled centralized dispatch for DER integrated system and distribution planningEnhanced dispatch engine capable of co-optimizing reliability, least cost and environmental impactsParticipation in the Southeast Energy Exchange Market
<div><div>NATURAL RESOURCE STEWARDSHIP INNOVATION</div><div><i>Assess the potential for carbon reduction and sequestration and for applying greenhouse gas protocols</i></div><div><ul style="list-style-type: none">Reforestation and afforestation (1 million trees)Wetlands restorationSoil sequestrationAgriculture and forestry partnerships</div></div>	<ul style="list-style-type: none">Protected vegetation and wetlands on public landsPublic lands and waters provide significant economic value"Shade Your Stream" program for water quality	<ul style="list-style-type: none">Develop 1 Million Trees ProgramConduct climate change adaption researchEstablish partnerships with agricultural community

Long-term Actions — Set in 2020	Progress through FY 2022
<ul style="list-style-type: none">Additional renewable energy with storageOngoing nuclear performance improvements involving outage execution, capital projects and staffing alignment to support regulatory requests for 80-100 year nuclear unit operationsEvaluating the impact of retiring the balance of the coal fleet by 2035New flexible gas brought online to support renewables; demonstrate carbon captureTVA corporate fleet shifted to electric vehicles where feasibleCondition-based maintenanceIncrease investment in existing hydro assets to optimize performance and extend life	<ul style="list-style-type: none">TVA completed the environmental review and decided to retire two coal-fired units at the Cumberland Fossil Plant. One is expected to be replaced with a 1,450-megawatt combined-cycle natural gas facility by CY 2026. This will reduce carbon emissions from the site by up to 60%. TVA has not made a decision about the replacement of the second unit.99% growth of operating and committed solar capacity since FY 2020; over 3,000 MWs in-Valley solar when announced projects come online by 2028.Issued a Request for Proposal (RFP) for up to 5,000 MWs carbon-free energy to meet customer demand for utility-scale renewable energy as part of the Green Invest program and support TVA in moving toward its aspiration of net-zero carbon emissions by 2050.Invested in TVA's nuclear fleet, including replacing four steam generators at its Watts Bar Nuclear Plant Unit 2 which will optimize plant performance for the next 40-60 years.TVA's nuclear fleet achieved industry Top Quartile performance in 2022 and strives to have the best nuclear fleet in the nation by the end of 2025.Developed Climate Adaption Plan Progress Report outlining TVA's progress in five priority action areas.
<ul style="list-style-type: none">Digitization, advanced sensors and fiber-optic communication will better connect TVA's operational assets and expand integration of Distributed Energy ResourcesFully integrated planning, which resolves load shape locally and offsets the need for system scale peaking resourcesOperational infrastructure in place to fully support this integrated planning model	<ul style="list-style-type: none">Building a new state-of-the-art Primary System Operations Center. It is approximately 50% complete and is expected to be completed by the end of calendar year 2023 and fully operational in 2025.Continued participation to develop the Southeast Energy Exchange Market to deliver affordable, reliable and cleaner energy.Working with Tennessee Tech University on the development of robots specifically for use in substations for automated inspections; with other utilities and EPRI, a non-profit energy research and development organization, on the ability to adapt commercially available robots to perform inspections in substations; and with Mississippi State University on unmanned aircraft systems, commonly known as drones.
<ul style="list-style-type: none">Be a leader in nature-based climate solutions to mitigate climate change and build resilience500,000 trees planted and 15 acres of wetlands restored/improved by 2035; 1 million trees by 2050Carbon sink and flooding protection (adaption) projects	<ul style="list-style-type: none">Invested \$120,000 in FY 2022 to improve water quality, protect aquatic biodiversity and sequester carbon through the Tennessee Riparian Incentive Program with Tennessee Department of Agriculture and other federal, state and local agencies.Planted 20,000 trees through the 1 Million Trees Program since 2021.TVA's Board approved the TVA Biodiversity Policy, supporting biodiversity investments in TVA projects and community support partnerships. TVA's holistic approach to integrated resource management, combined with its large service area, positions TVA as a regional leader in biodiversity conservation.Planted more than 3,800 feet of streambank vegetation to reduce erosion, protect water quality and support aquatic biodiversity.Developed Climate Adaption Plan Progress Report outlining TVA's progress in 5 priority action areas including Climate Resiliency for Aquatic Species.

Everyone benefits

Programs help customers lower their carbon footprint

In partnership with TVA, Knoxville Utilities Board (KUB) has undertaken a renewable energy commitment that makes Knoxville the No. 1 city in the Southeast for solar investment. Partnerships such as these make a big difference.

KUB's collaboration with TVA is expected to bring 325 megawatts of solar energy – enough to power about 54,000 homes – online through TVA's Green Invest program, which matches customers committed to renewable energy with clean energy projects in the region.

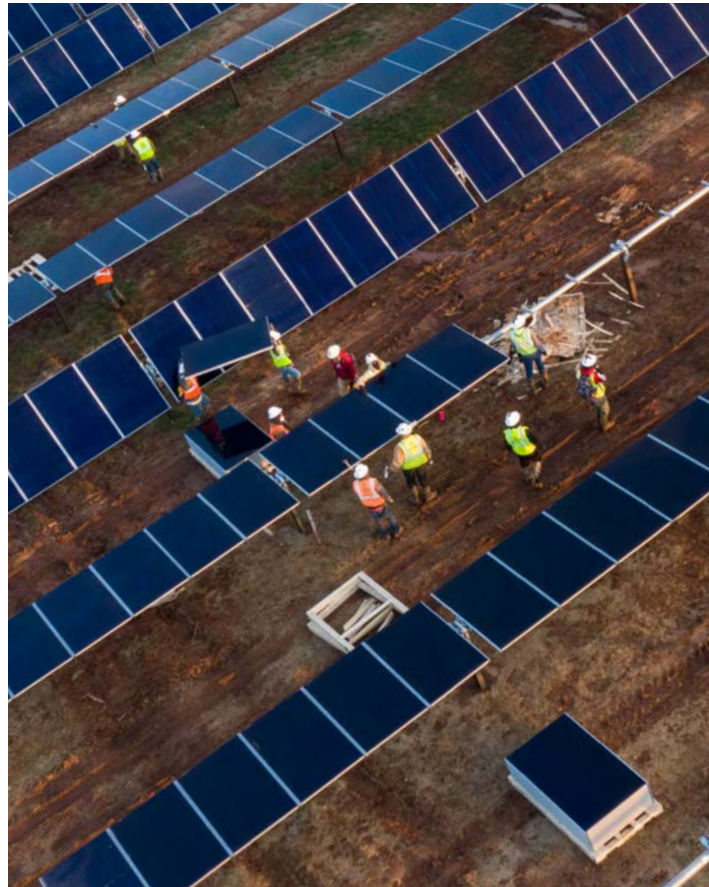
Green Invest is one of several programs within TVA Green, a portfolio of renewable solutions that help customers meet their sustainability goals. These programs also help reduce carbon emissions and increase jobs and investments across the region.

Through Green Invest, TVA has contracted to bring more than 2,200 megawatts of utility-scale, new-to-the-world solar to the region, and nearly \$3 billion has been invested since 2018.

Another program, Generation Flexibility, encourages renewable energy growth at the local level by enabling local power companies to generate a portion of their own energy. TVA currently has Generation Flexibility agreements with 83 of its long-term partners.

As TVA builds the energy system of the future, its plans include adding 10,000 megawatts of solar by 2035.

“Our Green programs help local power companies and their residential and business customers reduce their carbon footprint to achieve their sustainability goals,” said Chris Hansen, vice president of TVA Origination & Renewable Solutions.



TVA has invested nearly \$3 billion in Green Invest projects.

In partnership with TVA, Knoxville Utilities Board (KUB) has undertaken a renewable energy commitment that makes Knoxville the No. 1 city in the Southeast for solar investment.

Building the Energy System of the Future

AFFORDABLE / RELIABLE / RESILIENT / CLEAN

TVA
TENNESSEE
VALLEY
AUTHORITY



National Leader in Carbon Reduction

EV transformation

TVA drives toward future

Today, gas and diesel vehicles represent the largest source of carbon emissions in the U.S.

With electric vehicle initiatives, TVA and its partners aren't just paving the way for more EVs on local roads. They are laying the foundation for a clean energy economy.

The first step: a near-term goal with its partners to have well over 200,000 electric vehicles on roads in the region by 2028.

Today, five auto manufacturers are focused on EV production in the

region: Ford (future electric truck), GM (Cadillac Lyriq), Volkswagen (ID.4), Nissan (Leaf) and a Mazda-Toyota joint venture. In 2022, two new EV suppliers – Envision AESC (EV batteries) and Tritium (EV charging stations) – joined a growing list of support companies.

In 2022, TVA also launched its Fast Charge Network in partnership with state agencies and local power companies.

In the next five years, about 80 new fast charging locations are expected



Jeff Lyash, TVA President and CEO, at a Fast Charge location in Martin, Tennessee.

to be added along interstates and major highways across the agency's seven-state service area.

“The electrification of transportation can be as transformative to this region as TVA's electrification of the Valley was back in the 1930s,” said Jeff Lyash, TVA President and CEO.

‘Walking the talk’

TVA makes energy efficiency upgrades to its facilities

TVA is passionate about energy.

And the agency’s work starts at home – with a focus on energy efficiency and water conservation in its facilities.

The Federal Energy Management Program recognized TVA in fall 2022 as the top-ranked federal agency in the nation for its progress in reducing the energy use intensity of its buildings. Similar to cars, intensity can be thought of as the miles per gallon rating of the building industry.

TVA’s Internal Energy Management Program oversees energy and water conservation projects and is responsible for ensuring the enterprise meets federal mandates and energy efficiency goals.

In FY 2022, TVA invested more than \$2.8 million in facility improvements that reduced energy waste by 3,353 megawatt hours and resulted in \$302,000 in annual savings. Since 2008, TVA has reduced its own energy usage by 1,050 gigawatt hours – enough energy to power over 71,000 average homes for a full year.

The resulting carbon emissions savings is like taking 160,000 passenger vehicles off the road for one year.

“As TVA works to educate others about energy efficiency, I’m proud that we’re also walking the talk,” said Daryl Williams, manager of TVA EnergyRight® for Federal, who oversees the Internal Energy Management Program. “The tips and strategies we offer to consumers apply to us as well.”

TVA also has plans to reduce carbon emissions from its 2,500-vehicle fleet. By 2030, TVA plans to electrify 100% of its light-duty and 50% of medium-duty vehicles, thus reducing gasoline usage and lowering carbon emissions.

TVA facilities achieved energy and water efficiencies through improvements to lighting and heating, ventilation and air conditioning systems as well as by installing low-flow water fixtures, more efficient windows and insulation in ceilings.

“We are making our spaces more comfortable while lowering our operating costs and helping the environment,” said Chris Azar, senior program manager of TVA’s Internal Energy Management Program. “It’s a win-win.”



The Federal Energy Management Program recognized TVA in fall 2022 as the top-ranked federal agency in the nation for its progress in reducing the energy use intensity of its buildings.

Mitigating risks

Climate preparedness has never been more critical

The electricity TVA produces enables about 10 million people to turn on their lights – at home and at work.

Given the extreme weather experienced these past few years – winter ice storms, flooding, record-setting heat and devastating tornadoes – climate preparedness has never been more critical.

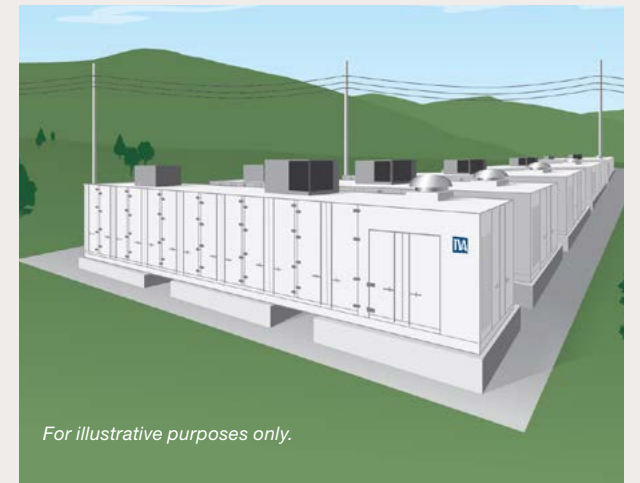
TVA details forecasting and climate preparedness efforts in its [Climate Action Adaption and Resiliency Plan](#), which equips TVA planners with the analytical tools, framework and guidance needed to ensure that its policies, projects and plans are climate resilient.

TVA’s most recent plan was published in 2021 and updated in 2022. Annual updates improve resiliency planning by providing the latest information on science and technology, management objectives, stakeholder concerns, resource availability and other factors.

The agency is currently in the first year of a multi-year River Management Climate Change Impact Assessment, which will evaluate the impact of climate scenarios on six key river management areas – water supply, flood prevention, navigation, recreation, water quality and power production.

TVA is also partnering with the U.S. Department of Energy’s Water Power Technologies Office and Oak Ridge National Laboratory to gather projected temperature and precipitation data from global climate models. The research will be used for long-term planning of river operations and evaluating climate impacts and adaption strategies.

“We are committed to ensuring our grid’s resiliency,” said Rebecca Tolene, Vice President of TVA Environment and Chief Sustainability Officer. “We have addressed climate concerns since 1933. The only difference today is that we have more assets, more partners and more sophisticated tools for predicting – and mitigating – our risks.”



Battery storage to play key role

As TVA works to optimize its generation assets and strengthen its transmission system’s resiliency, battery energy storage systems will play a key role.

In 2020, TVA launched its first grid-scale, lithium-ion demonstration battery project, and in 2022, broke ground for the battery project, which will be located near Vonore, Tennessee.

TVA will apply what it learns from this project to guide future integration of renewables and battery storage on its transmission system.

An important value for storage is the ability to complement intermittent generation like solar. The battery can store the excess solar energy and then discharge the electricity to support demand at night and other times solar is not available.

Environmental leadership

Yesterday

From the beginning, TVA was tasked with taming the floods of the wild Tennessee River and protecting and improving the region’s natural resources.

TVA established a unique problem-solving approach to fulfilling its mission, a policy of examining each issue – power production, flood management, reforestation or erosion control – from a broad perspective. This policy of holistic integrated resource management continues today.

Today

TVA’s overarching Environmental Policy is to produce increasingly clean, affordable and reliable power, support sustainable economic growth in the Tennessee Valley region, and promote proactive environmental sustainability in a balanced and ecologically sound manner.

TVA manages the Tennessee River system and 293,000 acres of public lands to provide multiple benefits to the people it serves. It seeks to ensure that future generations will enjoy the same safe, healthy and beautiful natural areas we do today.

Tomorrow

The environmental challenges the world faces today have evolved since the agency was established in 1933, but TVA is continuing to build on its long history of environmental stewardship.

In an increasingly developed world, TVA’s approach to resource management is integral to protecting the region’s natural spaces while supporting its sustainable economic growth.

As the pace of climate change accelerates, extreme weather events – such as ice storms, flooding and record-setting heat waves – have become more common in TVA’s service region. Climate change may impact the Tennessee River’s water supply or affect the health of the region’s habitats and biodiversity.

TVA is adapting its resource management plans to ensure that it can continue to live out its mission of service. In a changing climate, TVA is committed to clean air and water, sustainable waste management, and proactive biodiversity protection.



Longear Sunfish

Environmental Leadership Snapshot



Metric	FY 2020	FY 2021	FY 2022	FY 2022 Highlights
Total Acres of Habitat Protected (# Acres)	247,104	247,098	247,257	TVA completed 120 biodiversity projects and initiatives in FY 2022.
SO ₂ (metric tons) (CY)	17,082	25,226	22,331	TVA’s Environmental Policy outlines its commitment to continuous improvement, proactive stewardship of the Tennessee River system and its public lands, and compliance with applicable environmental and legal requirements.
NO _x (metric tons) (CY)	12,577	15,210	15,270	
Coal Combustion Products Beneficially Used (%) (CY)	87%	59%	82%	
Compliance: Notice of Violations	6	1	4	TVA manages the Tennessee River for multiple benefits. TVA works to protect water quality and aquatic life and to manage water supply, reducing damage caused by both floods and droughts.
Freshwater Consumption Rate (Billions of liters/net MWh)	0.0000008	0.0000008	0.0000007	
Total Water Withdrawal-Non-Consumptive (Billions of liters/net MWh)	0.0000823	0.0000823	0.000231	
Estimated Averted Flood Damage (\$M)	\$1,000	\$170	\$3	TVA provides environmental education to engage students and lifelong learners in environmental stewardship. As COVID-19 restrictions waned, TVA returned to the classroom in 2022.
Environmental and Community Engagement (# Group activities)	307	264	449	

Replenishing the environment

Biodiversity flourishes with an integrated approach to resource management

In the early 1930s, this part of the country desperately needed help.

Farmers toiled to grow crops on eroded soil that lacked nutrients. Valleys and hillsides displayed stumps of cut forests, strip mines and land denuded of foliage. Rivers capable of supplying economic prosperity instead flooded communities and flowed wastefully to the sea.

Seeing an opportunity to breathe life back in this once-beautiful region, Congress created TVA as a regional agency of the federal government in 1933, directing it to aid in “the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin and ... adjoining territory.”

A team of naturalists, scientists, engineers and skilled craftspeople answered the call. They aimed to change the region’s course, and they did so by using the concept of integrated resource management. TVA was the first federal or state agency to manage a region holistically.

TVA created a unified program that successfully managed water, land, minerals and forests as one interrelated set of opportunities for improving the quality of life in the region.

In a few short years of applying this holistic approach, the area began to transform.

Farmers held erosion to a minimum and started to thrive. Forests were protected and replenished.

The Tennessee River was managed for flood control, its waters supplying the region with clean, low-cost electricity. It further provided low-cost transportation, with improved water supplies for cities and industries, and innumerable recreation opportunities.

And the transformation continues today. TVA furthers its mission of environmental stewardship through the wise use of natural resources. It is committed to clean air and water and manages 293,000 acres of land and 11,000 miles of shoreline for public use.

TVA created a unified program that successfully managed water, land, minerals and forests as one interrelated set of opportunities for improving the quality of life in the region.



Clockwise from top left: Civilian Conservation Corps workers plant trees near Norris, Tennessee, in 1933; Forestry plots near Norris in 1939; Engineers survey the Norris Dam site in 1933; Starved and nourished farmland in the summer of 1937; and engineers H.R. Johnston and B.T. Clark at the Norris Dam site in 1933.



‘A special place’

Biodiversity efforts protect ecosystem



From aquatic biologists in snorkeling gear to botanists traipsing through beautiful fields, it might look like TVA scientists are just having fun.

In fact, they're focusing on biodiversity and protecting all living things.

TVA's Biodiversity Policy states that TVA will protect biodiversity through its stewardship of public lands, management of the Tennessee River system, local and regional partnerships, and integration of species and habitat conservation in project planning.

In FY 2022, TVA completed 120 biodiversity projects and initiatives. The projects fell into three general categories: on-the-ground conservation, monitoring and research, and education and outreach.

An important aspect of TVA's biodiversity work involves conservation efforts at its facilities. For example, TVA has installed 10 acres of pollinator habitat at its new Primary System Operations Center.

Botanists and others are also evaluating thousands of acres of grass at TVA

properties to determine if they could be converted to pollinator habitats.

“In an increasingly developing world, it is important to do conservation work everywhere, not just in conservation areas set aside from people,” said Adam Dattilo, biodiversity senior program manager at TVA.

Partnerships also play a critical role in protecting the environment.

TVA and the Electric Power Research Institute – along with Southeastern Grasslands Institute and Mississippi Entomological Museum – are conducting a three-year, multi-state research study on TVA transmission rights-of-way on the Cumberland Plateau in Tennessee. Initial results indicate standard vegetation management activities on rights-of-way have large benefits for both pollinators and plants.

“We live in a special place, and there are plants and animals that live only here,” Dattilo said. “As part of our environmental stewardship mission, we need to maintain these species for future generations.”

Environmental Policy

TVA improves quality of life and the environment in the region by providing affordable, reliable and increasingly clean energy; engaging in proactive stewardship of the Tennessee River system and public lands; and supporting sustainable economic growth.

The Environmental Policy defines TVA's commitment to environmental protection and compliance, continuous improvement, and partnership and transparency.

The policy reinforces use of an environmental management system and reflects today's changing customer requirements and overall corporate responsibility demands. The policy requires an annual environmental performance review by the TVA Board to demonstrate TVA's commitment to continuous improvement in proactive stewardship and in reducing TVA's environmental footprint.

[Learn more at tva.com/biodiversity](https://www.tva.com/biodiversity)



Frosted elfin lays its eggs on the yellow wild indigo. (Photos courtesy Julius Basham)



A rare find

Botanists protect endangered butterfly and its host plant

On a secluded TVA right-of-way in Nantahala National Forest, a unique encounter takes place over two weeks each summer.

The rare frosted elfin butterfly lays eggs only on yellow wild indigo – the butterfly’s host plant.

The two species are always found together, because the rare butterfly requires the plant to survive. Since the plant needs full sun, TVA rights-of-way provide critical habitat for the species in the dense forest.

A few years after Tennessee naturalist Julius Basham and his father discovered a colony of frosted elfin butterflies, Basham led botanists from TVA and the U.S. Forest Service to the

North Carolina location.

During their nighttime trek, the botanists used LED blacklights to illuminate the butterflies’ larvae. They found 115 caterpillars and 81 host plants across 7 acres of TVA right-of-way.

Based on their findings from 2022, the partners are working to protect and expand the colony.

“This would have never happened without Julius,” said Adam Dattilo, TVA biodiversity senior program manager and one of the botanists that conducted the survey. “He really put in motion a true conservation effort to protect both the frosted elfin and its host plant.”

Homecoming

Mussels reintroduced to North Carolina river

When a group of scientists ventured into Nantahala National Forest in North Carolina last fall, they carried an unusual tool – Super Glue.

Members of the Little Tennessee Native Fish Conservation Partnership, which includes TVA, used the glue to secure personalized tags on 4,600 mussels. The partners had raised the mussels in a hatchery and reintroduced them to the Tuckasegee River.

The wavy-rayed lampmussels hadn’t been seen in the river in more than 100 years, and the tags enable the group to track the mussels’ health and population.

“Mussels provide a whole suite of ecosystem services,” said Matt Reed, a TVA aquatic ecologist. “A healthy mussel bed is akin to a coral reef in the ocean.”



Biologists offer helping hand to tiny mussels.



TVA specialists work with partners to preserve mussels.

One mussel can filter up to 8 gallons of water every day. Large congregations of mussels attract food for aquatic animals, provide habitat for fish to spawn, stabilize the bottom of the river, and prevent erosion.

The partnership – which consists of state, federal and non-profit participants – promotes and preserves biodiversity throughout the Little Tennessee River Basin.

“We are proud to be part of the partnership and help with the propagation and reintroduction of native mussels back into the watershed,” said Rebecca Hayden, director of TVA Natural Resources. “Partnerships such as these are key to implementing conservation efforts across the region.”



A big splash

Little snail darter swims off endangered species list



The tiny snail darter has made a big comeback.

After being protected under the Endangered Species Act since 1975, the fish is no longer on the list.

“It is partners like TVA, who are committed to working together to change the trajectory of species like the snail darter, that give hope to ongoing conservation efforts across the country,” said Dan Elbert, U.S. Fish and Wildlife Service field supervisor for the Ecological Services Program in Tennessee.

In the 1970s, as TVA closed in on finishing construction of Tellico Dam in East Tennessee, biologists discovered the snail darter in the waters above the dam. Under the Endangered Species Act, TVA temporarily halted construction.

To protect the fish from extinction, TVA, state and federal biologists relocated snail darters to various free-flowing rivers in the area prior to dam completion.

Over the years, TVA worked to create water conditions necessary for snail darters to migrate and thrive.

Today, the snail darter is one of only 55 species to have been delisted due to recovery.

“The success story here is that we’ve included protecting biodiversity in TVA’s way of operation and policies, which allows native species like the snail darter to exist,” said Jeff Simmons, TVA aquatic zoologist.

A birding paradise

Tennessee River nurtures migratory and year-round avian species



Millions of shorebirds and waterfowl travel down the Mississippi Flyway every year.

Along the way, they depend on the Tennessee River and its shorelines for food, water and habitat. It provides more than any other river system in the Southeast.

Other bird species such as eagles, herons and hawks may be observed in the region year-round, making TVA public lands must-see destinations for birdwatching.

TVA supports this rich avian biodiversity by protecting and improving both the water quality of the Tennessee River system and the habitat provided by its public lands. TVA's special river operations also improve habitat and food sources for the birds at critical times through the controlled release of dams.

In partnership with state and federal wildlife agencies, TVA has driven avian protection efforts that include:

- Installation of nest boxes
- Planting native grasses for songbirds, game birds and other wildlife
- Building nesting platforms for osprey
- Providing educational resources for visitors and residents

TVA is working to complete a Memorandum of Understanding to document its avian conservation work. It is also developing a TVA-wide Avian Management Plan that will standardize management procedures, identify and address avian challenges, and ensure TVA's compliance with changing avian-related laws and regulations.

Unexpected discovery

Bat on endangered species list makes reappearance



TVA terrestrial zoologists tag and monitor local bats.

When TVA terrestrial zoologists surveyed a cave near Norris Reservoir in East Tennessee, they made an unexpected discovery: the northern long-eared bat, which they hadn't seen in years.

Listed as endangered under the Endangered Species Act, the northern long-eared bat has been hard hit by the spread of white-nose syndrome.

The fungus, discovered in the Northeast in 2006, has killed millions of bats in North America.

"Northern long-eared bats are notoriously hard to find in caves," said TVA terrestrial zoologist Liz Hamrick. "They're tiny and hibernate in small crevices or cracks. The one we discovered in 2022 was the only one found during winter surveys in the entire state of Tennessee."

Based on statewide data collected by several partners, including TVA, the Tennessee Wildlife Resources Agency



reports that populations of northern long-eared bats in the state have dropped more than 98% since 2010.

They were last recorded in three TVA-managed caves in 2014.

TVA continues to monitor bat populations and collect swab samples for researchers across the continent.

White-nose syndrome has no known treatment, and TVA terrestrial zoologist Jesse Troxler cautions cave explorers.

"Disturbing hibernating bats contributes to the decline of this species," Troxler said. "Avoid trespassing in caves, and if you are authorized to explore a cave, take care to not disturb resting bats and disinfect your clothing and gear after each trip."

‘Best overall solution’

Taking the long view on a secure and clean energy future

TVA is committed to limiting the environmental impact of its operations and seeks opportunities to improve the quality of the region’s land, water and air.

A key component to this is the retirement of coal-fired fossil plants.

In early 2023, TVA decided to retire two units at its Cumberland Fossil Plant and build a combined-cycle natural gas facility by 2026 to replace one unit. TVA has not made a decision about replacement of the second unit.

“TVA is aggressively pursuing a sustainable, clean energy future while maintaining our commitment to providing affordable, reliable energy,” said Jeff Lyash, TVA President and CEO. “This decision is based on a thorough environmental and public review process that ensures we meet the growing energy needs of this region.”

Before the first of the two units is retired, TVA plans to build a 1,450-megawatt combined-cycle natural gas plant to maintain a reliable, uninterrupted power supply.

The combined-cycle plant at Cumberland will deliver a 50-60% reduction in carbon emissions from the site.

“Replacing retired generation with a natural gas plant is the best overall solution because it’s the only mature

technology available today that can provide firm, dispatchable power by 2026 when the first Cumberland unit retires,” Lyash said.

“Natural gas supports continued reduction of carbon emissions by enabling the integration of renewables, such as solar and battery storage, all while maintaining system reliability,” he added.

Additionally, TVA has spent \$6.8 billion to date to improve air quality in the Tennessee Valley region through emission controls on generation units.

An example of this work is found in the four selective Catalytic Reduction Systems – projected to reduce nitrous oxide emissions by 85% per unit – that have been approved for installation at the Shawnee Fossil Plant.

TVA is an industry leader in the management of coal ash, reducing waste and pollution through safe, secure monitoring of coal combustion residuals and pioneering technology to ensure coal ash sites are secure. TVA also has a robust groundwater monitoring program.

In addition, TVA recycles tons of waste from coal-fired units. In FY 2022, 1.2 million tons of fly ash, bottom ash, gypsum and dry scrubber products were used as ingredients in wall board and cement.

The D4 Program

As TVA retires units, the D4 Program ensures these sites are decommissioned, deactivated, decontaminated and demolished.

This involves:

Draining oils, fuels and solvents, salvaging usable equipment and removing residual ash and coal dust

Removing all energy sources to ensure the plant is cold, dark and dry

Removing all regulated materials such as universal waste and asbestos

Deconstructing buildings and structures, restoring the area so it is suitable for redevelopment



Safeguarding waterways

River management benefits region

Numbers tell an important part of TVA's river management story.

TVA manages more than 40,000 miles of rivers, streams and tributaries, including the 652-mile Tennessee River.

The agency's environmental stewardship efforts have led to nearly \$12 billion spent on recreation in the region every year. And river management efforts have averted \$9.7 billion in flood damage since 1936.

And there's more. So much more.

TVA uses its 49 dams to manage lake levels and river flows to balance competing demands on the reservoir system. The river management team works around the clock to provide a variety of benefits – flood control, navigation, hydroelectric generation, recreation, and water quality and supply.

In October 2022, when barges couldn't navigate parts of the Ohio and Mississippi rivers due to record-low water levels near Memphis, TVA worked with the U.S. Army Corps of Engineers, the U.S. Coast Guard and the towing industry. They scheduled releases from Kentucky Dam into the Tennessee River and from Barkley Dam

into the Cumberland River to stabilize flow to the Ohio and Mississippi rivers.

"It took a lot of partnerships in that section of the river to communicate, coordinate and support industry," said James Everett, senior manager of the TVA River Forecast Center.

TVA's dams also played a big role during Winter Storm Elliott, when the region needed additional energy.

The dams offer clean energy, are one of TVA's most-economical fuel sources, and offer flexibility because they may be brought online quickly.

In August 2022, TVA published its water supply report, [Water Use in the Tennessee Valley for 2020 and Projected Use in 2045](#).

"The report provides a look at water use across the region, including thermoelectric, public, industrial and agricultural use," said Amanda Turk, manager of Hydrologic Impact and Risk Evaluation. "We publish this report to understand current and future use so we can ensure we continue to meet our operating objectives well into the future."

Hidden treasures

Protecting species and waterways

As one of the most biologically diverse areas in North America, the Tennessee River Watershed has more than 240 native fish species and 75 mussel species that call it home.

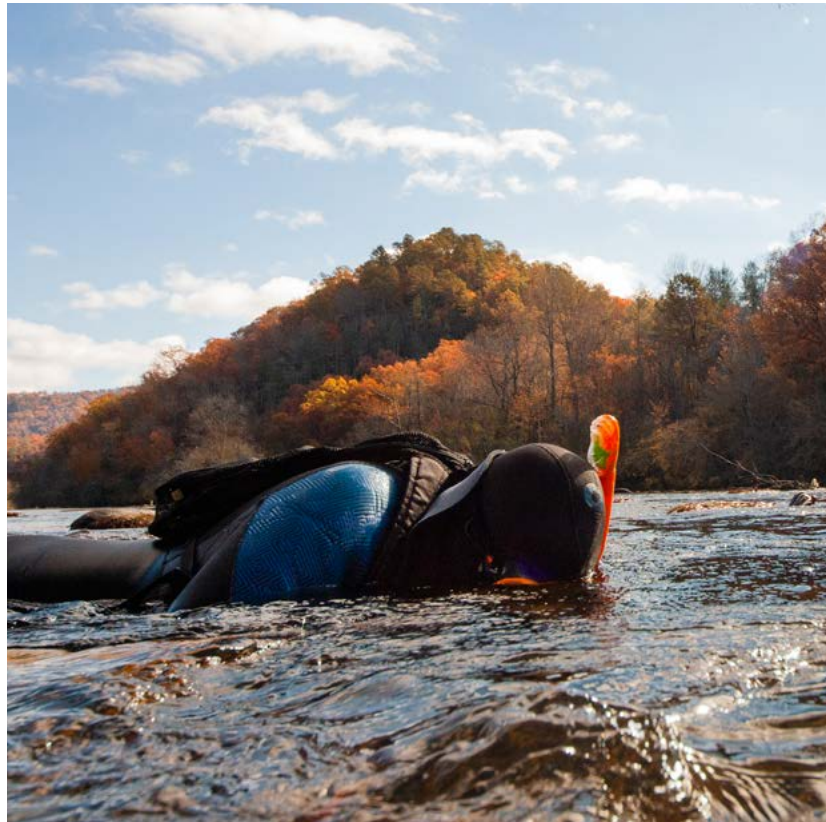
TVA manages the Tennessee River and its tributaries with partners across the region.

“We couldn’t do this alone,” said Shannon O’Quinn, TVA water resources specialist. “A lot of these fish and mussels live nowhere else in the world, and we work closely with our partners to promote aquatic biodiversity in the watershed.”

TVA follows a Natural Resource Plan approved by the TVA Board of Directors in 2020. Its water resources management includes improving aquatic habitats, monitoring the health of aquatic species, reducing pollution, evaluating how climate change impacts watershed conditions, managing soil nutrients, protecting marinas and promoting outreach.

As a part of implementing the Natural Resource Plan, TVA biologists collect fish community data across the region. This information is used by TVA to make sound operational decisions and is shared with partners to help target and track water resource improvements. Together, they develop strategies and implement projects that protect and improve aquatic biodiversity.

A great example is the Tennessee River Basin Network, where peer agencies and nonprofit organizations from across TVA’s seven-state



An important way to evaluate a habitat is to be in it.

region work to identify collaboration opportunities, share resources and initiate long-term planning to improve biodiversity in the watershed.

Public outreach is a huge part of this. In order for residents to get involved with protecting the Tennessee River, they have to see and understand the diversity of aquatic life that lives there.

An example of this occurred at the Bassmaster Classic in Knoxville in March 2023. There, TVA and Tennessee Wildlife Resources Agency representatives collected native fish and other critters out of the Tennessee River to temporarily display them in a 750-gallon fish tank for attendees to view.

“People can’t believe what is in their backyard,” O’Quinn said. “We offer education and outreach so people feel connected and aware. Biodiversity affects all of us, and it’s important that we continue to protect it.”



Repairing Boone Dam took 2 million work hours over seven years.



Delivering on a promise

Geotechnical feat achieved with Boone Dam repair

After discovering water and sediment seeping below Boone Dam in 2014, TVA promised the community it would correct the problem.

After seven years of intensive remediation work at the Kingsport, Tennessee, site, TVA returned recreational Boone Lake back to the public and resumed full generation of carbon-free energy at the Boone Dam hydropower facility in May 2022. Two of the dam’s three units remained operational throughout the project.

“This was the largest dam repair in TVA history,” said Don Moul, TVA Executive Vice President and Chief Operating Officer. “We made a commitment to complete this effort safely within seven years and to do it right the first time with a high-quality repair. We delivered on our promise.”

TVA achieved a major geotechnical engineering feat that included 2 million hours of dam remediation.

With partners, TVA constructed a seepage barrier in several phases, including two years of around-the-clock construction of a non-erodible underground cutoff wall.

After that, workers restored the flood protection provided by the dam to its previous elevation by construction of a floodwall.

“TVA executed a highly technical project on a rapid schedule, all while maintaining the safety of the public and its workers and engaging the local community,” said Chris Saucier, technical director of the project and a principal project manager in TVA Dam Safety.

Effective River Resource Management

\$9.7 billion
Estimated historical flood damage averted

\$3 million
2022 estimated flood damage averted

Economic development leadership



Yesterday

Established to lift the Tennessee Valley region from the depths of the Great Depression, TVA was mandated from the beginning to provide for the economic development of the region and to supply energy at the lowest feasible cost.

Affordable energy, flood control and other benefits TVA provided helped transform the region from one of the poorest areas in the nation to its current prosperity.

Today

TVA powers economic success by providing affordable, reliable and clean energy.

With its economic development partners, TVA works to attract innovative industries and investments to the region, engage existing businesses and industries, and help communities prepare for sustainable economic growth.

Tomorrow

TVA is working with its local power company partners to build a thriving regional economy where increasingly clean energy and green jobs make life better.

As the nation moves toward a clean energy future, sustainability has joined cost and reliability as a key factor in determining where to locate or expand operations for a growing number of businesses and industries.

TVA's ability to balance carbon reduction efforts, affordability and reliability is essential to attracting these businesses and enabling continued economic growth. TVA recognizes its unique position and responsibility to build a clean energy economy.

With growing power demand expected to continue, TVA is collaborating with partners to evaluate potential paths forward for the region. The clean energy transition may be as transformative as TVA's electrification of the Tennessee Valley was in the 1930s. Ninety years later, TVA is again prepared to lead the way.

Economic Development Snapshot



Metric	FY 2020	FY 2021	FY 2022	FY 2022 Highlights
Capital Investment in the Region (\$B)	\$8.6	\$8.8	\$10.2	TVA is working with partners to make the region a leader in electric vehicle (EV) production by attracting automakers and suppliers to the region. Two new EV suppliers announced investments in the TVA region in 2022.
Jobs Created (#)	19,400	22,599	26,512	
Jobs Retained (#)	48,031	58,350	40,027	
Non-Fuel Delivered Cost of Power (cents/kWh)	3.2	3.22	3.18	Residential rates in the TVA service area are lower than 70% of the top 100 U.S. utilities, and industrial rates are lower than 90%.*
Retail Rate (cents/kWh)	9.14	9.18	10.25	
Total Diverse Business Spend (\$M)	\$388.5	\$365	\$518	TVA is committed to maintaining a competitive, diverse supplier base. TVA launched the Ready Now supplier university program in December 2022 to help prepare small diverse businesses to do business with TVA.
Total Small Business Spend (\$M)	\$844	\$856	\$1,100	
Total Region Business Spend (\$B)	\$1.8	\$1.8	\$2.0	

*Based on Sept. 30, 2022, 12-month rolling average from U.S. Energy Information Administration

An opportunity to prosper

Region transforms into economic powerhouse

A lot has changed in 90 years.

A predominantly rural, impoverished area that had few opportunities for its inhabitants has transformed into one of the fastest-growing and sought-after regions in the nation.

Much of this progress is related to TVA's revitalization of the region's natural resources and its economic development work.

It started with TVA's system of locks and dams, which provided flood control, halting annual devastation and averting billions of dollars of flood damage since TVA completed its first dams in 1936.

This system created a deep navigation channel from Knoxville to Paducah, allowing freight to move around the world beginning in 1945.

The development of reservoirs and the surrounding lands provided recreational opportunities. Today, the 11,000 miles of shoreline TVA manages equates to about \$1 million of revenue per mile or about \$12 billion annually.

TVA also provided clean, low-cost electricity, which encouraged industries to grow and relocate to the region.

Addressing the overworked soils was another critical step to supporting the region's economic growth. In the 1920s

and '30s, much of the region resembled a desert and was worn out to the point of worthlessness.

TVA developed potent fertilizers and collaborated with other agencies in the development of land management practices to help bring the land back to life.

To put these advancements into perspective, in 1933, personal income in TVA's seven-state footprint averaged \$168 per capita, only 45% of the national level. By 2018, it was \$40,374, 82% of the national level.

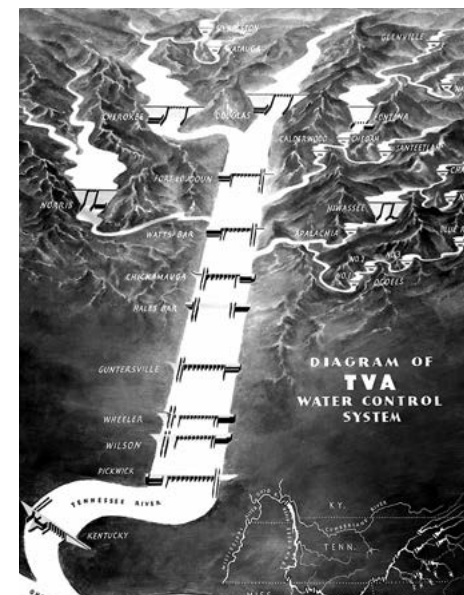
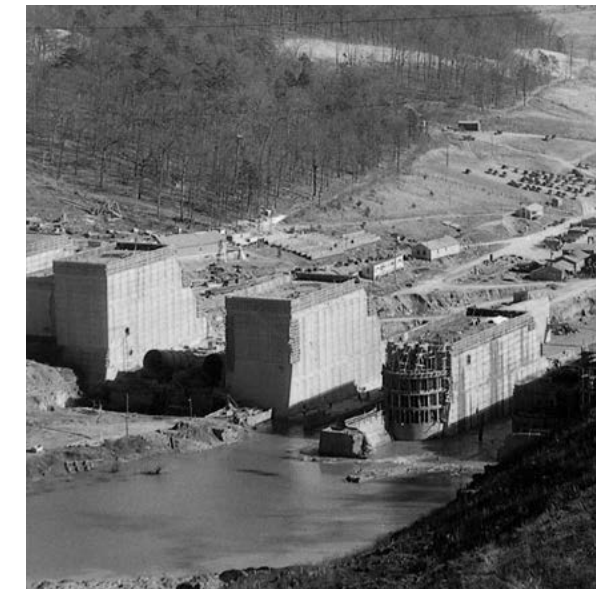
Today, TVA's Economic Development team continues to attract new companies and engage existing businesses and industries to help them grow in a sustainable way.

TVA's approach harkens back to the beginning: Partnering with regional, state and community organizations to bring quality opportunities to the people of the region.

In the past five years alone, TVA supported economic development projects in the region that are projected to make almost \$48 billion in capital investments, create 117,354 jobs and retain 229,560 jobs. Much of that growth has been in electric vehicle assembly lines and suppliers, solar or battery storage manufacturers, and other high-tech industries.

TVA is committed to helping communities achieve lasting success in this dynamic, prosperous region.

Today, TVA's Economic Development team continues to attract new companies and engage existing businesses and industries to help them grow in a sustainable way.



Clockwise from top left: Workers inspect book casings at Kingsport Press in Kingsport, Tennessee, in 1933; Water in the spillway at Pickwick Landing Dam in 1955; Workers at General Shoe Corp. in Tullahoma, Tennessee, in 1940; Wheeler Dam in 1957; A strawberry-capping machine, part of the food industry, in Cleveland, Tennessee, in 1940; Diagram of TVA Water Control System in 1943; Head kiln fireman at Southern Potteries in Elroy, Tennessee, in 1933; and Norris Dam (center) was TVA's first construction project in 1935.



TVA's affordable, reliable energy and focus on sustainability help attract business to the region.

“Economic development is a team sport that involves collaboration with a variety of stakeholders to make life better for the people of our region.”

John Bradley,
Senior Vice President of Economic Development



Sustainable growth

Partnering to attract businesses and good jobs to region

As part of its mission of service, TVA works to bring quality jobs and capital investments to its seven-state service area.

As growth in the region reaches unprecedented heights, large businesses and industries continue to leverage the value of TVA's affordable, reliable, clean energy, and focus on sustainability in their decision to locate or expand here.

In partnership with customers, state and local leaders, and community organizations, in FY 2022, TVA helped attract \$10.2 billion in projected capital investments – with 26,512 jobs expected to be created and 40,027 jobs retained.

Over the past five fiscal years, TVA supported economic development projects in the region that total almost \$48 billion in projected capital investment, 117,354 jobs created and 229,560 expected jobs retained.

Some of the newest projects include:

First Solar – the nation's largest solar panel manufacturer – is investing \$1.1 billion and expects to create more than 700 jobs in Lawrence County, Alabama.

Steel Dynamics is expanding its operations in Lowndes County, Mississippi, with a projected capital investment of \$2.5 billion and 1,000 jobs.

LG Chem is investing \$3.2 billion and projecting 860 jobs at a new facility in Clarksville, Tennessee, for building components for electric vehicle batteries.

Sinova Global announced plans to establish operations in Lake County, Tennessee, thus creating 140 new jobs and investing \$150 million in the new silicon metal refining plant.

Novonix plans to bring almost 300 new jobs to Chattanooga to supply synthetic graphite for electric vehicle batteries.

Ford Motor Company's investment of \$5.6 billion in West Tennessee is expected to create almost 6,000 direct jobs – the largest economic development announcement in Tennessee history.

“Economic development is a team sport that involves collaboration with a variety of stakeholders to make life better for the people of our region,” said John Bradley, TVA senior vice president of Economic Development.

“We will continue to provide reliable, low-cost, clean energy that, in turn, attracts businesses here. Together with our partners, we are moving the economy and a sustainable future forward.”

TVA named a Top Utility in Economic Development by Site Selection magazine for 17th consecutive year.



The right thing

TVA works hand in hand with 153 local power companies (LPCs) to provide affordable energy to the region.

The ability to control costs and keep power rates steady for customers has given families in the communities TVA serves needed relief from the pandemic, record inflation and fuel prices.

Nationwide, utility customers are experiencing higher bills than in TVA's service area because residential power rates in this area are lower than 70% of the top 100 utilities in the country. Over the past 10 years, TVA's wholesale power rate has maintained an average of about 7 cents per kilowatt hour.

TVA also reinvests in its communities.

TVA donated more than \$9 million in community contributions and disaster relief in FY 2022.

It also invests in energy efficiency programs such as TVA EnergyRight® Home Uplift, School Uplift and Community-Centered Growth, all of which provide energy savings for residents, students and businesses.

Mutual accountability and trust

Suppliers committed to sustainability, DEIA sought

TVA's Core Values – Safety, Service, Integrity and Inclusion – are fundamental principles that guide actions, behaviors and decisions. Both employees and suppliers are committed to those values.

The agency's [Supplier Code of Conduct](#) details expectations for suppliers, including the importance of protecting the environment and valuing diversity, equity and inclusion.

TVA expects suppliers to be committed to sustainability and continuous improvement, to proactively manage natural resources and to maintain compliance with all applicable environmental laws, rules and regulations.

Laura Campbell, vice president of TVA Supply Chain, said TVA practices sustainable procurement, or buying “green,” and wants suppliers to develop sustainability policies and goals so the agency can do business with suppliers that

are environmentally responsible.

TVA also expects suppliers to foster a diverse, equitable and inclusive workplace. Small, diverse suppliers bring great value to TVA as well as to their communities through job creation and other opportunities.

To assist in these efforts, TVA hosts an annual Supplier Diversity Summit that enables small, diverse businesses to network with TVA and partner organizations.

A program launched in December 2022 called Ready Now is increasing TVA's pipeline of small, diverse suppliers by providing the tools they need to be ready to respond to requests for proposals.

“Our partnerships with suppliers depend on mutual accountability and trust,” Campbell said. “These partnerships are at the heart of our ability to deliver for the communities and people of this region.”

A reliable future

TVA invests in diverse assets and capacity expansion

As the region grows and energy demands increase, TVA remains committed to a critical aspect of providing power – system reliability.

In both summer and winter 2022, severe weather events put record demands on TVA's system, with energy demand exceeding 30,000 megawatts for several consecutive days. For reference, 1 megawatt roughly supplies enough energy to power 585 homes. TVA maintains one of the nation's largest, most diverse, and cleanest generation portfolios, and its detailed planning and strategically diverse power system contribute to its ability to flex to deliver power.

TVA's hydroelectric power and nuclear assets allow TVA to meet demand 24/7 while keeping costs low, and its simple combustion turbine gas units – which normally serve only peaking power – can be used around the clock to maintain system reliability.

All of these factors, combined with the dedication of TVA employees and partners, enabled TVA to meet record demand during heat waves experienced throughout the Southeast in the summer of 2022.

Yet when Winter Storm Elliott arrived

in December 2022, it brought with it unprecedented conditions and drastic drops in temperature that exceeded TVA's efforts. TVA implemented emergency operation plans to ensure the stability of the grid.

“Given its speed, intensity, scale, and duration, the National Weather Service calls Elliott a ‘once in a generation’ storm,” said Jeff Lyash, TVA President and CEO. “We hope it is. But we're not counting on it.”

TVA has already completed more than 250 actions to harden the system and, in partnership with others, conducted a thorough After-Action Review.

“To ensure a secure energy future for our region, we are investing in strategies that will deliver affordable, reliable, resilient, clean energy for decades to come,” Lyash said.

Among those strategies was the investment of \$18 billion in capacity expansion and base capital from FY 2014 through FY 2022. This includes about \$1 billion a year to maintain existing assets.

Today, TVA is building more than 3,800 megawatts of new generation from combustion turbines, solar projects, combined-cycle natural

gas and energy storage. This is in addition to investments in a robust transmission system and 16,000 miles of lines.

Between 2023 and 2027, TVA anticipates investing \$2.8 billion in transmission system improvements, including a new Primary System Operations Center. The center is a \$300 million investment that will use smart technologies to help manage the flow of electricity across TVA's 80,000-square-mile service area.



TVA team members worked around the clock during Winter Storm Elliott to keep the grid stable.

“Our financial results remain strong and we are in a good position to do the right thing for our customers – providing people with the help they need when they need it most while we continue to deliver our mission of service.”

Jeff Lyash, TVA President and CEO

Community leadership



Yesterday

TVA was built for the people – a public power company created to serve the public good.

In its first decades, TVA improved life in the Tennessee Valley region by bringing affordable electricity to rural and agricultural areas, controlling flooding from the wild Tennessee River, and supporting public health through programs to control malaria and other diseases.

TVA also provided skills training, steady employment and fair wages to its own workers – who, from the beginning, were part of every community they served.

Today

Powered by its dedicated, diverse and highly skilled workforce, TVA remains committed to building a better life for the people it serves.

TVA strives to be a trusted neighbor through corporate giving, employee volunteer efforts, and innovative programs that build on the agency’s long history of providing support and assistance to those in need.

Tomorrow

TVA recognizes its responsibility to ensure that no one is left behind as it builds a clean energy future.

TVA is committed to maintaining reliability and affordability throughout the transition. As its generation portfolio evolves, TVA is working with employees and communities impacted by facility retirements to determine an equitable path forward.

TVA is building more structure around its environmental justice efforts to better identify and address impacts on disadvantaged communities and increasing investment in energy efficiency programs to drive energy equity.

To ensure these benefits are accessible, TVA is strategically and intentionally weaving Diversity, Equity, Inclusion and Accessibility (DEIA) into all business activities and decision-making processes.

There is much work to be done, but TVA is working together with its partners to enable a just transition toward a brighter future.

Community Leadership Snapshot



Metric	FY 2020	FY 2021	FY 2022	FY 2022 Highlights
Incremental Annual Electricity Savings from EE (MWh) (CY)	101,138	19,777	37,708	TVA EnergyRight's Home Uplift provided free home energy upgrades to 1,543 income-eligible families in FY 2022. Participants save an average of \$500 on their yearly utility expenses.
Incremental Annual Investment in EE programs (\$M) (CY)	\$15.7	\$25.4	\$33.3	
Annual Tax Equivalent Payments (without FCA) (\$M)	\$552	\$500	\$512	Since April 2020, the Community Care Fund has contributed almost \$18 million to local charitable organizations, with TVA and LPCs each contributing nearly \$9 million.
Community Care Fund (\$M)	\$2.6	\$1.8	\$4.5	
Stakeholder Survey (%)*	78.2%	78.3%	79.4%	Through Valley Vision 2035, TVA and a collaborative of stakeholders are developing a collective vision for how to evolve the region's public power model.
Tribal Engagement	36	57	38	
Safe Workplace (RIR)	0.34**	0.26	0.44	TVA performed in the top quartile nationally for recordable injury rate and top decile for serious injury incident rate.
Serious Injury Incident Rate (SIIR)	0.03	0.03	0.02	
Military/Veteran Share of Workforce	18.10%	17.90%	17.54%	TVA has established representation goals aimed at increasing the number of women and people of color in leadership to match the available workforce by 2033.
People of Color Share of Workforce (%)	11.00%	11.24%	11.81%	
Women Share of Workforce (%)	20.10%	20.37%	20.78%	

*Three-year average, not annual rate
**Revised due to reclassifications

Lifting up all

TVA's mission stands the test of time

People often characterize TVA as a utility company. It is so much more.

President Franklin Roosevelt highlighted this sentiment at a 1934 news conference when he said, “Power is really a secondary matter... TVA is primarily intended to change and to improve the standards of living of the people of that Valley.”

He shared that the 3.5 million people living in the Tennessee Valley watershed had few opportunities.

Generations of farming had worn out the soil, resulting in devastating erosion and nutrient depletion. Many people tried to eke out livings as tenant farmers.

The economy of the region depended almost entirely on agriculture, and crop yields decreased year after year. Very little industry existed.

Rural areas did not have utilities. Only three farmers in 100 had electricity, while even fewer had running water. Housing was substandard and illiteracy soared to twice the national average.

Malnutrition and disease plagued families, with about three people out of five suffering from malaria.

And the land was marked by decades of mistreatment from mining and overcutting of trees.

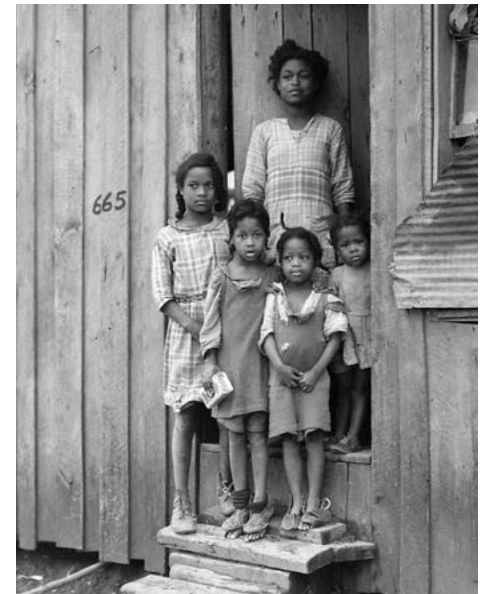
When TVA ramped up operations, it provided health clinics, three square meals a day, education, lending books, skills training for workers and their families, and an opportunity to earn a living wage.

The dams they built helped reduce the fear of flood devastation and provided low-cost electricity to residents and incoming industry.

The fertilizer and agricultural assistance TVA provided helped farmers prevent erosion and improve crop yields. Land and water conservation ushered in an era of flourishing biodiversity and recreational opportunities.

TVA continues its mission today of serving people through its work in energy, environmental stewardship and economic development – not for the betterment of a few, but for the best of all.

When TVA ramped up operations, it provided health clinics, three square meals a day, education, lending books, skills training for workers and their families, and an opportunity to earn a living wage.



Clockwise from top left: Farm near Andersonville, Tennessee, in 1933, prior to Norris Dam's construction; Family in the Tennessee Valley region in 1936; Farmer on worn-out land in North Alabama in 1936; Cooking on a wood stove in 1934; and boy with sled in March 1935.

Power of partnership

EnergyRight® programs improve life

TVA EnergyRight® programs offer win-win-win scenarios.

People spend time in healthier buildings. Homeowners, school districts and businesses save money. And TVA and local power companies experience lower energy demand, which improves grid reliability.

In partnership with local power companies and local, state and federal organizations, TVA offers energy efficiency programs that reduce energy costs, lower carbon footprints and, in many cases, improve energy equity for participants across the region.

For example, EnergyRight's Home Uplift program provides free energy upgrades to qualifying residents' homes. Upgrades such as a new HVAC system, insulation and tighter seals around windows and doors reduce energy bills by as much as \$500 a year.

In addition to bill savings, homeowners breathe cleaner air, are safer in their homes during the hot summer and cold winter months, and have more money to spend on essentials such as medication and groceries.

Today, 56 local power companies have partnered with TVA to offer Home Uplift, which has upgraded more than 4,300 homes since the program's inception in 2018. Each home, on average, receives upgrades totaling \$10,000.

Now in its third year, School Uplift is a free initiative that helps public schools cut energy waste.

The program is expected to help up to 100 schools each year improve their facilities and reduce energy usage by as much as 10%, which could save each school an average of \$8,000 per year.

TVA is piloting a program called Community Centered Growth where TVA partners with local power companies in economically distressed areas to provide energy efficiency upgrades to community-based small businesses.

The goal is twofold: invigorate small businesses and empower sustainable growth in communities that need it most.

Eligible communities fall within National Opportunity Zones and Justice 40 census tracts, underserved areas identified by census data and factors such as income and population. Over the past two fiscal years, 80 businesses have received funding for upgrades such as indoor lighting, security lighting, HVAC systems and efficient kitchen equipment.

TVA helps large customers as well. For example, TVA provides power to the U.S. Army's massive Redstone Arsenal, which includes NASA's Marshall Space Flight Center.

Through its Federal Energy Services Program, TVA audited about 4 million square feet of space at Marshall Space Flight Center and found opportunities to improve lighting, air conditioning, building exteriors and water reduction, among other things.

The work helped NASA – as it built and launched the latest spacecraft, the Artemis I – achieve temperature, lighting and humidity consistency, which is critical to its work.

"TVA cannot do any of this work alone," said Doug Perry, senior vice president of TVA Commercial Energy Solutions. "It's through the power of partnership that we are making life better for people across the region."



TVA and PES Energize participate in ribbon-cutting for a Connected Communities hotspot in Lynnville, Tennessee.

BETTER PERFORMANCE

Thanks to a TVA EnergyRight® Business & Industry incentive, Belmont University in Nashville, Tennessee, outfitted its new 150,000-square-foot performing arts center with an energy-efficient HVAC system and LED lighting that will reduce the school's annual energy use by more than 1 million kWh.

BALANCED TEMPERATURES

Cumberland Presbyterian Church in Fayetteville, Tennessee, received a TVA EnergyRight® HVAC incentive that enabled the church to replace its old HVAC system, resulting in a 42,120 kWh reduction in annual energy use.

'Tremendous potential'

Making smart homes smarter

Imagine a future where you could share clean energy within your neighborhood at a moment's notice.

The technology isn't far off.

Oak Ridge National Laboratory, Murfreesboro Housing Authority and Middle Tennessee Electric are demonstrating a platform that uses software, controllers and an end-user mobile app to create a unique interface between a resident, their home's smart devices and appliances, and their local power company.

TVA is funding the research through its Connected Communities initiative, which launched in 2022 and partners with communities to provide equitable access to technology, development of technical job skills, and energy and environmental justice.

The TVA Connected Communities Open Home Energy Management System (HEMS) offers the prospect of turning an entire community into an electric battery that powers homes during an outage.

Open HEMS also anticipates customer demands for electricity, enables the resident to control home devices and appliances that can store renewable energy, and uses sources of renewable electricity.

"This is a very exciting and practical energy technology with tremendous potential for both residents and power companies," said Joe Hoagland, vice president of TVA Innovation and Research.

Building a brighter future

Focus on environmental justice

A lot has changed in the 18 months since TVA formally established its Environmental Justice program.

“The environmental justice space is very dynamic,” said Janice Horn, senior program manager of TVA Environmental Justice. “We are growing along with it.”

The program created structure around TVA’s environmental justice work to align with presidential executive orders that frame federal agencies’ efforts to address disproportionate health, environmental, economic and climate impacts on disadvantaged communities.

During FY 2022, TVA created an Environmental Justice Core Team

that is developing a framework that will help TVA better identify disadvantaged communities and build outreach programs to meet their needs. It also established a broader Environmental Justice Regulatory and Policy Team for enterprise-wide perspective.

“TVA has a long history of helping communities,” said Skip Markham, senior manager of Regulatory Affairs at TVA. “It’s who we are. Now we are working to be more strategic in our outreach, and we’re also working within TVA to enhance communication and bring consistency to our efforts.”

Horn said TVA’s environmental justice work is about creating a brighter

future, which it does through programs such as Home Uplift, School Uplift and Community Centered Growth.

“It is important that we meet our stakeholders where they are – in their communities, and that we listen to what they need,” Horn said.

“Everything we do should be through the lens of considering those less fortunate,” she added. “We are here to serve all the people of the region and to improve their quality of life.”



Families are treated to a day on the lake.

TVA proud to support C.A.S.T. for Kids

TVA partnered with community organizations and C.A.S.T. for Kids to provide 33 children a summer fishing adventure on Gunter'sville Lake that they'll never forget. C.A.S.T. for Kids gives children with special needs an opportunity to participate in a unique event that offers a day of fun in an accepting community.

“These events enable kids to get out on our reservoirs and enjoy the many natural resources in the region,” said Shannon O’Quinn, TVA senior water resource specialist. “These events are some of the most rewarding of the year; the kids’ excitement is infectious.”

Care for cultural resources

Repatriation and reburial of Native American Ancestors

TVA cares for Native American Ancestors and cultural items that are excavated across the region during decades of public works projects and archeological research.

The agency is working to improve the process of repatriation of Native American Ancestors and funerary objects.

For the past 10 years, TVA has worked diligently to return Ancestors to Native American Tribes, in compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) and has listened to Tribal Nations’ needs regarding repatriation and reburial of Ancestors.

Reinterment of Ancestors, though not required under NAGPRA, is the next

step following repatriation and is of the utmost concern to Tribes.

“To uphold TVA’s federal trust responsibility to Tribes, TVA committed to provide land for the purposes of reburial of Native American Ancestors and funerary objects,” said Marianne Shuler, TVA archaeologist and tribal liaison. “Reinterment isn’t required but it is the right thing to do.”

TVA maintains physical possession of the Ancestors and their objects until the Native American tribes are ready for transfer or reburial.

And, in consultation with Tribes, TVA integrates recommendations and cultural protocols into the ways in which Ancestors are cared for until they are returned to their final resting place.



Nature outing provides path toward inclusion

Participants of an accessible nature outing experienced the beauty of the outdoors together at the TVA Native Plant Garden Trail in Muscle Shoals, Alabama.

Representatives from TVA and two partners, the Alabama Department of Conservation and Natural Resources and the Muscle Shoals National Heritage Area, organized the program to give people of varied abilities the opportunity to observe native birds, insects and plants.

Event leaders pointed out and explained sensory aspects of nature so all participants could enjoy the trail.

“I smiled from ear to ear,” said Sara Bayles, TVA watershed representative. “I loved watching them learn.”



Nature walk participants enjoy the experience.

Giving back

As a trusted neighbor, TVA contributes financially to the communities it serves. Its Giving Pillars and Giving Principles guide its contributions.

In FY 2022, TVA donated \$9.2 million:

- \$2.9 million to education
- \$2.7 million to community enrichment
- \$1.3 million to disaster relief and emergency response
- \$1.2 million to diversity and inclusion
- \$600,000 to health, hunger and housing
- \$300,000 to workforce development and training
- \$200,000 to arts and culture

TVA also created the Community Care Fund to provide matching grant funds to support and partner with local power companies to meet pandemic recovery needs in their communities.

Since April 2020, the Community Care Fund has contributed almost \$18 million to local non-profit organizations in the region. TVA has committed an additional \$3 million in FY 2023 and expanded the scope to projects that support one of the TVA Giving Pillars.

Additionally, through FY 2022, TVA provided a combined total of \$449 million in Pandemic Relief and Pandemic Recovery Credits for local power companies, large commercial and industrial customers, and directly served customers.

Powerful partnerships

Valley Vision 2035 works toward collective vision for energy future

In August 2019, TVA offered local power companies (LPCs) the option to sign 20-year partnership agreements that provide competitive rates and flexibility to meet changing market needs.

More than 95% of the LPCs TVA serves have become long-term partners. Together, they are working to shape the energy system of the future.



And in 2021, TVA created Valley Vision 2035 – a collaborative comprised of representatives from local power companies,

large federal customers, customer associations and TVA.

Valley Vision 2035's goal is to develop a collective vision for how to evolve the region's public power model.

Meeting monthly, the group is working to understand the industry landscape, identify trends and uncertainties that drive change, construct future marketplace scenarios, and translate those findings into business models that deliver value for the seven-state region TVA serves.

For each scenario that is discussed, participants evaluate customer needs, new capabilities that might be needed, roles and responsibilities, and potential products, services and programs.

“Valley Vision 2035 is a conversation between TVA and its customers about emerging issues that could impact the energy marketplace,” said Hunter Hydas from TVA Regional Relations.

“It’s important to remember that while the public power model might change over time, TVA will always be committed to our mission of providing reliable, low-cost energy, environmental stewardship, and economic development,” Hydas added.

“TVA will always be committed to our mission of providing reliable, low-cost energy, environmental stewardship, and economic development.”

Hunter Hydas, TVA Regional Relations



TVA's mission helps ensure a healthy future for generations to come.



TVA is a founding member of the Tennessee RiverLine.

Watershed moment

RiverLine creates opportunities

The Tennessee River offers natural beauty, recreational opportunities and the potential for economic growth in the region.

The Tennessee RiverLine Partnership, of which TVA is a founding member, is working to create a network of paddling, hiking and biking experiences that will stretch along the Tennessee River from Knoxville, Tennessee, through parts of Alabama and Mississippi to Paducah, Kentucky.

In a study published in June 2022 by the Howard H. Baker Jr. Center for Public Policy, researchers

from the University of Tennessee and the University of Alabama found that economic growth from the Tennessee RiverLine could increase spending in the region up to \$103.8 million annually and increase total employment by 1,959.

“The RiverLine project is expected to positively affect the health of residents as well as the environmental health of the river itself, making life better for the people of the region,” said Allen Clare, vice president of TVA River and Resources Stewardship.



Focus on teams

Supporting TVA's workforce

The more than 10,000 employees who work at TVA are the backbone of the enterprise.

By investing in them, TVA is investing in its future.

TVA's workforce support and benefits enhance employee well-being and help employees successfully grow their careers.

Benefits range from health and dental insurance, confidential employee assistance, and generous retirement plans to a variety of training programs.

In FY 2022, TVA launched two new benefits.

One is the Family Building program, which provides up to \$30,000 to employees seeking to grow their families through adoption, fertility treatments or surrogacy.

The other benefit is through Bright Horizons and offers up to 10 days of emergency backup care for employees caring for children, elderly parents and pets.

"We want to support all employees' well-being," said Joe Galardi, director of TVA Benefits and Well-Being. He commended TVA's Employee Resource Groups for providing "insight into unique needs that we might not have considered."

TVA's People Advantage also offers a heightened focus on talent development and provides developmental tools for all employees. In FY 2022, employees and contractors engaged in more than 738,200 hours of training.

And key to creating a healthy workplace is a focus on safety. Safety is one of TVA's core values, and the agency works hard to create a safety culture.

TVA remains in the top quartile nationally in recordable injury rate and the top decile for serious injury incident rate.

A focus on employee health and safety

- Employees donated 12,914 hours of leave to the Voluntary Leave Transfer Program in FY 2022.
- The Office of Inspector General has joined with TVA Police to offer active shooter response training. Since 2018, 1,065 employees have participated.
- 3,872 employees completed heat stress training.
- Improvements were made to the Safety Net app with training launched to help employees easily access procedures, safety messages and other safety items.



Volunteer spirit



From helping communities rebuild in the wake of natural disasters to supporting nonprofit organizations as they deliver vital services every day, TVA employees rise to the call time and again.

TVA employees logged nearly 2,000 volunteer hours in FY 2022.

TVA recognizes that its employees go



above and beyond in volunteering their personal time – and does its part to support the organizations that matter most to its team members.

Through TVA's Dollars 4 Doers program, employees who volunteer at least 25 hours with an eligible nonprofit can earn a TVA monetary donation for the organization they served.

Union partnerships deliver results

About 58% of TVA's employees are represented by 17 labor unions.

As the demand for skilled, high-quality labor within the region increases, strong relationships between TVA and its union partners are more important than ever.

In 2022, TVA reached a historic agreement with the Labor Council for

Annual Employees to further widen the hiring pool by ensuring that external diverse candidates are considered alongside union referrals for externally posted Trades and Labor jobs.

TVA is proud of its partnerships with unions and looks forward to working together over the next 90 years to meet the needs of this region.

Sustainability begins with DEIA

TVA commits to Inclusion with Diversity

Diversity, Equity, Inclusion and Accessibility (DEIA) is essential to building a sustainable future for TVA.

DEIA strengthens TVA's talent pipeline, creates a healthier work environment for its employees and makes life better for the people of the region.

It's an integral part of how TVA does business.

TVA has significantly advanced its DEIA efforts in recent years. To ensure visibility and accountability, TVA established a formal Inclusion with Diversity (IwD) structure that includes a Chief Diversity & Inclusion Officer and IwD Councils.

These councils provide oversight for an IwD program that starts with leadership and cascades throughout the organization.

TVA's nine Employee Resource Groups (ERGs) help build a culture of inclusion through education. ERGs focus their efforts on diverse populations while seeking to support all TVA employees through networking, social gatherings and volunteer opportunities. TVA recently added a new ERG, the Council of Native Americans.

TVA also views its supplier partners as an extension of its culture, and is committed to a diverse, competitive supplier base reflective of the communities TVA serves.

Small and diverse businesses are invited to participate in competitive bidding opportunities, and TVA promotes diverse subcontracting relationships, offers support services, and encourages large suppliers to mirror TVA's DEIA commitment.

"Working together, we can ensure that future generations inherit a world where diversity is sought, valued and celebrated as the asset that it truly is," said Megan Flynn, TVA's Chief Diversity & Inclusion Officer and Vice President of Talent & Culture.



To learn more about TVA's efforts to strengthen Inclusion with Diversity in its workforce, supply chain and the communities it serves, view the full **TVA Diversity, Equity, Inclusion and Accessibility Report** at [TVA.com/reports](https://www.tva.com/reports).

Do good here

TVA is a community of difference-makers with diverse experiences and perspectives, united by a mission that matters.

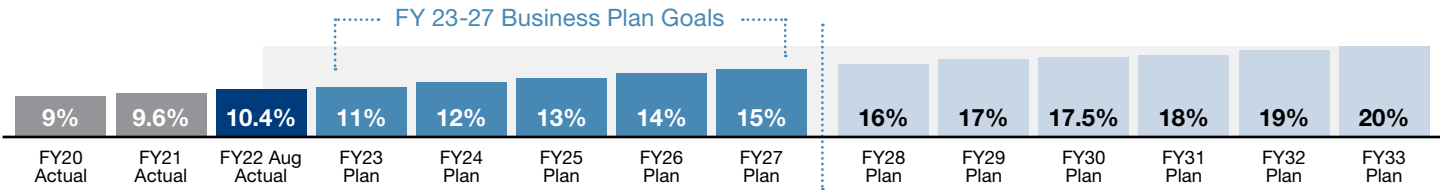
It's critical to this mission that TVA attract, develop and retain top talent reflective of the communities it serves.

TVA collaborates with union partners, trade schools and universities to build a more diverse talent pipeline, and is taking steps to advance equity in the compensation structure, benefits package and advancement opportunities TVA offers its workforce.

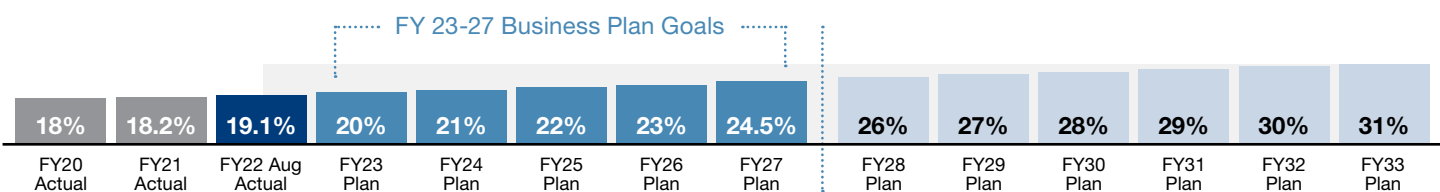
To close gaps and strengthen accountability, TVA has established representation goals aimed at increasing the number of women and people of color in leadership to match the available workforce by 2033.

10-Year Enterprise Diversity Goals

People of Color Representation in Leadership / 2020 Qualified Leaders Available 19%



Female Representation in Leadership / 2020 Qualified Leaders Available 31%



Driving diverse talent pipelines

To attract the talent TVA needs, it offers paid educational opportunities such as the CADnet School-to-Work Program, internship program and training courses for skilled workers like power plant operators and other trades positions such as pipefitters and line workers.

TVA partners with its unions, universities and other regional institutions to drive inclusiveness and accessibility in these programs and in the talent pipeline.

Currently, more than 300 students are participating in TVA's internship program, and it projects that number to almost double by this summer. In FY 2022, 70% of TVA's interns were hired as full-time employees, and 40% of the new hires were diverse candidates.

Governance leadership



Yesterday

TVA's first Code of Ethics, written and distributed less than 60 days after the agency's establishment in 1933, stated: "The affairs of the Tennessee Valley Authority shall be conducted in all respects with honesty and openness."

Though considered revolutionary at the time, this commitment to transparency shows that TVA's first leaders understood something that still holds true today: The success of the public power model relies on trust between TVA and its customers, stakeholders and the communities it serves.

Today

TVA maintains high ethical standards and a commitment to transparency and engagement with stakeholders. TVA's governance structure provides the oversight and perspective necessary to manage risk, drive progress and maintain the trust that's at the heart of fulfilling TVA's mission of service.

Tomorrow

Guided by its Core Values, TVA will continue to build its ethical culture, maintain transparency and provide opportunities for engagement with its teams and leadership.

In the face of new and anticipated challenges – from cybersecurity threats and extreme weather events to political and regulatory uncertainties – accountability and transparency are more important than ever.

TVA's strong governance and many layers of oversight drive robust resilience planning. This guidance helps the agency learn, anticipate and respond to challenges as TVA works together with its partners to ensure a secure energy future for the Tennessee Valley region.

Governance Leadership Snapshot



Metric	FY 2020	FY 2021	FY 2022	FY 2022 Highlights
Total Number of Board of Director Members	5	7	5	TVA's Board members are nominated by the president of the United States and confirmed by the U.S. Senate. Six new Board members, confirmed in 2023, bring diverse perspectives and experiences.
Total Number of Female Board of Director Members	0	1	1	
Total Number of Minority Board of Director Members	0	0	0	
Federal Sustainability Report Disclosure	SR&IP and AEMR	SR&IP and AEMR	SR&IP and AEMR	TVA is committed to continuous improvement in its sustainability reporting practices. TVA has provided customer-specific carbon emissions rates since 2012, helping our partners understand and disclose their performance and meet their carbon goals.
Investor Sustainability Report Disclosure	EEI-ESG Industry Template	EEI-ESG Industry Template	EEI-ESG Industry Template	
Customer Carbon Accounting Disclosure	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	
Operating Cash Flow (\$M)	\$3,636	\$3,256	\$2,948	TVA's total financing obligations on Sept. 30, 2022, were the lowest in 35 years. Despite high inflation and fuel prices, TVA is maintaining a steady base rate for FY 2023.
Net Income (\$M)	\$1,352	\$1,512	\$1,108	
Total Financing Obligations (\$B)*	\$21.4	\$20.5	\$20.3	

* Revised due to reclassifications

Built for all the people

Service is at the heart of all that TVA does

Born out of the Great Depression, TVA started with strong leadership to solve the many problems facing the Tennessee Valley region.

The first board developed the blueprint for the agency. While the TVA Act defined TVA's mission, the board translated it into action. Their responsibilities were divided into three areas.

Arthur E. Morgan, well-regarded engineer from the Miami (Ohio) Conservancy and president of Antioch College in Ohio, was hand-picked by President Franklin Roosevelt to serve as TVA's first Chairman of the Board. He oversaw the social and economic development programs of TVA as well as the management of the river system.

Harcourt A. Morgan, unrelated to A.E., was well-known and respected in southern agricultural circles and served as president of the University of Tennessee. He fostered growth in the agricultural and fertilizer research spheres.

David E. Lilienthal was a Harvard-trained lawyer who came to TVA after serving on the Wisconsin Public Utilities Commission. His expertise created TVA's power system – a system that electrified the rural south.

One characteristic all three of these men shared was the desire to make life better for people. They recruited

talented individuals into every part of TVA, who partnered with leaders and people across the region to implement programs to help this part of the country thrive.

In TVA's first decade, Mary Utopia Rothrock created the regional library system that supplied books to rural areas. Max Bond, TVA's first Black supervisor, worked to ensure vocational equity for construction workers in Alabama.

And Roland Wank brought art and design into the region through his monumental structures, designing Norris, Fontana, Chickamauga and Hiwassee dams.

TVA was so successful in its approach to managing a region spanning several states that its integrated resource management system became a model for countries around the world.

Besides hosting visitors, TVA, in partnership with the U.S. State Department, developed a resource management seminar for representatives from foreign countries.

The leaders and people who worked at TVA helped transform a region. They took a vision supplied by President Roosevelt and made it a reality.

That same level of leadership and desire to serve remains as vital today as when this great experiment started.



Clockwise from top left: The first TVA Board included Harcourt Morgan, Arthur Morgan and David Lilienthal in 1933; Architects Theodore Parker, Roland Wank, Earle Draper and Harry Tour in 1939; Mary Utopia Rothrock, shown here in 1937, created the regional library system; Chemists Paul Imes, Samuel Watkins and George Richardson work at Muscle Shoals, Alabama, in 1943; FDR signs the TVA Act in 1933; Paul Johnson, carbide foreman and Black Auxiliary Labor leader, in Muscle Shoals in 1943; and Regional Library Truck (center) at Caylor School in Blount County, Tennessee, in 1943.

The leaders and people who worked at TVA helped transform a region. They took a vision supplied by President Roosevelt and made it a reality.

‘We are delighted’

Six new members welcomed to Board of Directors

Members of TVA's Board of Directors are nominated by the president of the United States and confirmed by the U.S. Senate. On Jan. 4, 2023, TVA welcomed six new Board members:

- Beth Geer of Brentwood, Tennessee
- Bobby Klein of Chattanooga, Tennessee
- Michelle Moore of Midlothian, Virginia
- Bill Renick of Ashland, Mississippi
- Joe Ritch of Huntsville, Alabama
- Wade White of Eddyville, Kentucky

“We are delighted to have them on the TVA team during this challenging but exciting period,” said Bill Kilbride, Chair of the TVA Board of Directors. “They each bring diverse perspectives and experience that will help guide TVA as it plans for the future while entering its 90th year of service to the region.”

The six new members joined existing members Kilbride, of Chattanooga, Tennessee; Beth Harwell of Nashville, Tennessee; and Brian Noland of Johnson City, Tennessee, which completed the full complement of the Board.

TVA's governance structure is critical to driving sustainability performance. As a government agency, TVA's mission of service is fundamentally different from that of publicly traded companies.

The TVA Board provides oversight, as do the Securities and Exchange Commission and Sarbanes-Oxley Act requirements. In addition, TVA has oversight from

Congress, the Government Accountability Office, Office of Management and Budget, the U.S. Treasury and an independent Office of the Inspector General.

TVA is committed to full transparency and engagement with stakeholders, because it believes engagement is a key tool in strengthening its work toward a sustainable future.

TVA takes steps to maintain transparency, respond to stakeholder inquiries and provide opportunities for engagement with its teams and leadership. It has several stakeholder advisory groups and community action groups, and it hosts public Board meetings and public listening sessions that rotate quarterly throughout the region to increase accessibility. Its two formal advisory councils – the Regional Energy Resource Council and the Regional Resource Stewardship Council – provide valuable input on numerous topics, including sustainability.



Bill Kilbride
TVA Board chair



Beth Harwell
TVA Board member



Brian Noland
TVA Board member



“TVA's history is highlighted by consistently overcoming challenges that ultimately improve the lives of about 10 million people. I am honored to join a team that seeks to simultaneously work to decarbonize our energy future while keeping rates low and the power system reliable.”

Beth Geer
TVA Board member



“I'm grateful to join the Board to help carry its mission into the future by ensuring the resilient, clean, affordable power TVA is building will support its decarbonization goals and the region's growth while benefiting the people it was created to serve.”

Michelle Moore
TVA Board member



“From my own experience, I know that the strength of TVA is defined by the people who work there, including the almost 60% that are union-represented. I look forward to contributing to the work the TVA team performs every day on behalf of everyone in our seven-state region.”

Bobby Klein
TVA Board member



“I've been privileged to work with many members of the TVA team over the years to bring new opportunities to northeast Mississippi. With the continued challenges rural communities are facing, TVA's mission remains as critical as ever, and I look forward to doing my part to serve the entire region.”

Bill Renick
TVA Board member



“My previous time on the TVA board provided me with the unique opportunity to experience all that TVA does to benefit the people of the region. It also reinforced for me the ongoing need for TVA to do even more, and I am honored to have another chance to serve.”

Joe Ritch
TVA Board member



“While serving the people of Lyon County, I've seen TVA's impact on the lives of people, in both good times and bad. Whether it is helping bring new businesses or jobs to an area or helping recover after storm damage, I am honored to be part of a TVA team that cares about the communities it serves.”

Wade White
TVA Board member

Focus on integrity

In August 2022, TVA became the first federal agency to earn the coveted Compliance Leader Verification™ from Ethisphere®, a global leader in defining and advancing the standards of ethical business practices.

“It was a privilege to test the ethics program of a federal agency, and our team is impressed by how TVA has embedded its ethics and compliance program into its business through its excellent training, written standards and monitoring,” said Leslie Benton, vice president of Ethisphere.

Ethisphere commended TVA for maintaining high ethical standards, and detailing those standards in its Code of Conduct, Executive Code of Conduct and Supplier Code of Conduct.

TVA’s Executive Vice President, General Counsel and Designated Agency Ethics Officer leads TVA’s Office of Ethics and Compliance. The office ensures TVA workers and contractors have the proper programs to help them act with integrity – a TVA Core Value. As such, TVA requires annual ethics training for all employees.

In May 2022, TVA rolled out an Enterprise Investigation process to help ensure timely actions to better address issues, complaints and concerns raised by employees and leaders.

Implemented based on employee and leadership feedback and following a multi-month review of TVA investigation methods, the new process is intended to strengthen the investigation process.

TVA is committed to fair hiring and employment practices. It has an executive policy on Equal Employment Opportunity, maintains an Equal Opportunity Compliance Office and states equal opportunity information in its Code of Conduct. TVA provides equal opportunity in employment to all employees and applicants, and it prohibits discrimination because of race, color, religion, sex (i.e., pregnancy, gender identity or sexual orientation), national origin, age (40 and older), mental and/or physical disability, genetic information and reprisal.

EMPLOYEE HIGHLIGHT: STEPHEN CRAVEN

In today’s world, resilient power grids are critical to everyday life – and at the same time, cybersecurity threats are becoming more prevalent and sophisticated.



Stephen Craven, a TVA Transmission & Power Supply electrical engineer, was named the 2023 Federal Engineer of the Year and TVA’s 2023 Ike Zeringue Engineer of the Year for his cybersecurity solutions that enhance grid security.

Responsible for cybersecurity for TVA substations and power system communications, Craven developed an architecture that makes critical communications between electrical substations faster, safer and more secure. His architecture has become TVA’s standard.

The Institute of Electrical and Electronics Engineers is sharing this new approach with other utilities to help modernize the nation’s power grid, improving resiliency while remaining safe from cybersecurity threats.

“We are proud of our team’s ability to deliver innovative solutions to solve complex challenges like our nation’s energy security issues,” said Jeff Lyash, TVA President and CEO. “Stephen’s work is critical to protecting our power grid as our nation transitions to a clean energy economy.”

Craven is a third-generation TVA employee.

“There is a sense of accomplishment when you find a way to improve the resiliency of a communications system, because your work is truly benefiting people,” Craven said. “I have found that to be extremely rewarding.”



Around-the-clock vigilance

TVA works nonstop to monitor and protect its critical cyber assets, partnering with other government agencies such as the FBI and the Department of Homeland Security as well as with peer utilities and industry groups such as the Edison Electric Institute.

TVA has a comprehensive cybersecurity program aligned to industry best practices that operates to predict, protect, detect and respond to threats. Its focus is to protect TVA by being proactive and using risk-based assessments.

In addition to having multi-layered threat analysis capabilities, it performs continuous monitoring, penetration testing and vulnerability assessments.

TVA’s critical systems are housed within a specialized, isolated network

that is separated from corporate networks and inaccessible by the internet. This segmentation provides a significant added level of security.

TVA trains its employees to recognize and resist cyber threats and adheres to an array of industry and government standards, including National American Electric Reliability Corporation Critical Infrastructure Protection standards, Nuclear Regulatory Commission security requirements, and the Federal Information Security Management Act.

“TVA’s highly regulated cybersecurity program protects our technology assets and workforce, which in turn protects energy sources and promotes safety for our customers across the region,” said Andrea Brackett, TVA Vice President of Cybersecurity and Chief Information Security Officer.

ENSURING DATA QUALITY IN SUSTAINABILITY REPORTING

TVA’s Sustainability Report provides data and context for TVA’s sustainability performance over the previous fiscal year.

To meet stakeholders’ needs for comparable and material data in sustainability reporting, TVA engages with industry-standard disclosure frameworks, including the Global Reporting Initiative and the Sustainability Accounting Standards Board.

TVA’s data management processes support data accuracy and consistency across reporting platforms. All metrics are reviewed by TVA’s Office of General Counsel, Disclosure Control Committee and internal subject matter experts during the Sustainability Report review process before publication.



TVA Police & Emergency Management protects TVA’s infrastructure, employees and assets.

Sustainability Steering Committee

TVA's executive-level Sustainability Steering Committee provides guidance for the development of TVA's Sustainability Program and its integration across the enterprise. The Steering Committee's work includes evaluating key focus areas, goals, metrics and reporting frameworks.



Brian Child
Vice President of
Enterprise Planning



Bob Deacy
Senior Vice President of
New Nuclear



Buddy Eller
Vice President of
Communications



Melanie Farrell
Vice President of
External Strategy and
Regional Oversight



David Fountain
Executive Vice President
and General Counsel



Chris Hansen
Vice President of
Origination and
Renewable Solutions



Joe Hoagland
Vice President of
Innovation and Research



Jessica Hogle
Chief of Federal Affairs



Justin Maierhofer
Regional Vice President –
North Region



Doug Perry
Senior Vice President
of Commercial Energy
Solutions



Angela Sims
Director of Diversity and
Inclusion



Heidi Smith
Director of Global
Business



Rebecca Tolene
Vice President of
Environment and Chief
Sustainability Officer



Diane Wear
Vice President and
Controller



Tammy Wilson
Vice President,
Treasurer and
Chief Risk Officer



Jacinda Woodward
Senior Vice President of
Power Operations



Appendix A – Global Reporting Initiative (GRI) Metrics

Category	Topic	Key Performance Metric Name	FY 2020	FY 2021	FY 2022
2-9	General Disclosures	Total number of Board of Director Members	5	7	5
2-9	General Disclosures	Total number of Female Board of Director Members	0	1	1
2-9	General Disclosures	Total number of Minority Board of Director Members	0	0	0
2-7	General Disclosures	Total Number of Employees	9,989	10,192	10,390
2-7	General Disclosures	Winning Performance Payout (%)	137%	142%	119%
2-1	General Disclosures	Total Owned Summer Net Capability at the end of year (MW) ⁶	32,750	32,433	32,012
2-1	General Disclosures	Owned Coal Summer Net Capability at the end of year (MW)	6,915	6,580	6,580
2-1	General Disclosures	Owned Natural Gas Summer Net Capability at the end of year (MW) ⁶	12,509	12,183	11,777
2-1	General Disclosures	Owned Nuclear Summer Net Capability at the end of year (MW)	7,922	8,275	8,232
2-1	General Disclosures	Owned Petroleum (Diesel) Summer Net Capability at the end of year (MW)	9	9	9
2-1	General Disclosures	Owned Total Renewable Energy Resources Summer Net Capability at the end of year (MW)	5,395	5,386	5,409
2-1	General Disclosures	Owned Biomass/Biogas Summer Net Capability at the end of year (MW)	0	0	0
2-1	General Disclosures	Owned Geothermal Summer Net Capability at the end of year (MW)	0	0	0
2-1	General Disclosures	Owned Hydroelectric Summer Net Capability at the end of year (MW)	5,394	5,385	5,408
2-1	General Disclosures	Owned Solar Summer Net Capability at the end of year (MW)	1	1	1
2-1	General Disclosures	Owned Wind Summer Net Capability at the end of year (MW)	0	0	0
2-1	General Disclosures	Owned Other Summer Net Capability at the end of year (MW)	0	0	5
2-1	General Disclosures	Total Owned Net Generation (GWh)	134,386	139,300	135,667
2-1	General Disclosures	Nuclear Generation (GWh)	64,531	66,265	64,475
2-1	General Disclosures	Natural Gas and/or Oil-Fired Generation (GWh)	33,479	33,290	36,259
2-1	General Disclosures	Coal-Fired Generation (GWh)	19,732	23,391	20,999
2-1	General Disclosures	Hydroelectric Generation (GWh)	16,644	16,354	13,934
2-1	General Disclosures	Petroleum Generation (GWh)	0	0	0
2-1	General Disclosures	Total Owned Renewable Energy Resources Generation (GWh)	16,644	16,354	13,934
2-1	General Disclosures	Total Purchased Power Generation (GWh)	19,435	20,478	29,789
2-1	General Disclosures	Purchased Power Renewable Generation (GWh)	7,683	7,269	8,684
2-1	General Disclosures	Federal Sustainability Report Disclosure	SR&IP and AEMR	SR&IP and AEMR	SR&IP and AEMR

Category	Topic	Key Performance Metric Name	FY 2020	FY 2021	FY 2022
2-1	General Disclosures	Investor Sustainability Report Disclosure	EEl-ESG Industry Template	EEl-ESG Industry Template	EEl-ESG Industry Template
2-1	General Disclosures	Customer Carbon Accounting Disclosure	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting
201	Economic Performance	Operating Revenues (\$M)	10,249	10,503	12,540
201	Economic Performance	O & M Expense (\$M)	2,720	2,890	2,986
201	Economic Performance	Non-Fuel Delivered Cost of Power (cents/kWh)	3.2	3.22	3.18
201	Economic Performance	Retail Rate (cents/kWh)	9.14	9.18	10.25
201	Economic Performance	Incremental Annual Electricity Savings from EE (MWh) (CY)	101,138	19,777	37,708
201	Economic Performance	Incremental Annual Investment in EE programs (\$) (CY)	15,660,000	25,386,000	33,296,000
201	Economic Performance	Operating Cash Flow (\$M)	3,636	3,256	2,948
201	Economic Performance	Net Income (\$M)	1,352	1,512	1,108
201	Economic Performance	Total Spend (\$M)	4,441	5,144	5,580
201	Economic Performance	Total Financing Obligations (\$B) ¹	21.4	20.5	20.3
201	Economic Performance	Nuclear Unit Capability Factor (%)	90.00%	90.5%	N/A
2-1	Economic Performance	Annualized Nuclear Online Reliability Loss Factor (%)	NEW in 2022	NEW in 2022	1.13%
201	Economic Performance	Load Not Served (System Minutes)	2.7	3.2	4.5
201	Economic Performance	Reliability Rating (Transmission System) (%)	99.999%	99.999%	99.999%
201	Economic Performance	Inventory Value—Materials and Supplies Inventory (\$M)	770	775	808
201	Economic Performance	External Nuclear Performance Indicators Measures	85.1%	91.1%	94.0%
201	Economic Performance	Total Annual Capital Expenditures (\$M) ⁷	1,643	1,963	2,361
201	Economic Performance	Coal Equivalent Availability Factor (EAF)	79.40%	71.60%	74.90%
201	Economic Performance	Combined Cycle Equivalent Availability Factor (EAF)	84.00%	85.30%	83.30%
201	Economic Performance	Economic Development - Capital Investment in the Valley (\$B)	8.6	8.8	10.2
202	Market Presence	Commercial Retail Electric Customer Count (average of CY) ⁵	17	17	16
202	Market Presence	Industrial Retail Electric Customer Count (average of CY) ⁵	43	43	45
202	Market Presence	Residential Retail Electric Customer Count (average of CY) ⁵	0	0	0
203	Indirect Economic Impacts	Jobs Created (#)	19,400	22,599	26,512
203	Indirect Economic Impacts	Jobs Retained (#)	48,031	58,350	40,027
203	Indirect Economic Impacts	Flood Management: Estimated Avoided Flood Damage (\$M)	1,000	170	3
204	Procurement Practices	Supplier Diversity: Total Diverse Business Spend (\$M)	388.5	365	518



Category	Topic	Key Performance Metric Name	FY 2020	FY 2021	FY 2022
204	Procurement Practices	Supplier Diversity: Diverse Business Utilization (%)	14.20%	10.80%	13.90%
204	Procurement Practices	Supplier Diversity: Total Small Business Spend (\$M)	844	856	1,100
204	Procurement Practices	Supplier Diversity: Small Business Utilization (%)	32.30%	25.20%	30.30%
204	Procurement Practices	Supplier Diversity: Total Valley Business Spend (\$B)	1.8	1.8	2.0
204	Procurement Practices	Valley Spend Utilization (%)	65.20%	52.80%	55.30%
301	Materials	Waste: Coal Combustion Products Beneficially Used (%) (CY)	87%	59%	82%
302	Energy	Performance Contracting - Investment Value (\$M)	3.3	2.5	3.4
302	Energy	Sustainable Buildings Progress (% reduction from baseline: GSF)	22.00%	22.30%	22.30%
302	Energy	Building Energy Intensity Progress (% reduction from FY 2003: Btu/GSF) (EO 13834)	67.60%	74.80%	76.40%
302	Energy	Building Renewable Energy Use (% renewable sources) (EO 13834)	18.70%	20.20%	20.70%
303	Water and Effluents	Building Potable Water Intensity Progress (% reduction from FY 2007: Gal/GSF) (EO 13834)	48.00%	40.60%	45.00%
303	Water and Effluents	Water Supply: Freshwater Consumption Rate (All Generation) (Billions of Liters/Net MWh) (CY)	0.0000008	0.0000008	0.0000007
303	Water and Effluents	Water: Total Water Withdrawal-non consumptive (Billions of Liters/Net MWh) (CY)	0.0000823	0.0000823	0.000231
304	Biodiversity	Total Acres of Habitat Protected (# acres)	247,104	247,098	247,257
305	Emissions	Clean Energy (Power from Carbon-Free Sources delivered) (%)	57%	56%	52%
305	Emissions	Scope 1 and 2 GHG Emissions (% reduction from FY 2008) (EO 14057)	51.00%	58.40%	64.1%
305	Emissions	Scope 3 GHG Emissions (% reduction) (EO 14057)	54.80%	58.90%	43.80%
305	Emissions	CLIMATE: TVA CO ₂ Tons from Owned Generation (metric tons) reported in CY	34,237,908	38,437,510	38,966,496
305	Emissions	CLIMATE: TVA Emissions (Owned CO ₂ Tons/ GWh)	288	303	317
305	Emissions	CLIMATE: TVA Emissions (Owned CO ₂ Metric Tons/ Net MWh) (CY/FY)	0.255	0.276	0.287
305	Emissions	CLIMATE: Purchased Generation CO ₂ Emissions (metric tons)	6,521,407	7,192,903	9,883,774
305	Emissions	CLIMATE: CO ₂ Emissions rate - System TVA Scope 2 CO ₂ Emissions Rate (Owned and Purchased lbs/MWh reported in CY)	561.92	637.67	658.06
305	Emissions	CLIMATE: Owned and Purchased Generation CO ₂ Emissions (metric tons) (CY)	40,759,315	45,630,413	48,850,518
305	Emissions	CLIMATE: Owned and Purchased Generation Emissions (Owned and Purchased CO ₂ Metric Tons/Net MWh) (CY/FY)	0.265	0.286	0.338
305	Emissions	CLIMATE: TVA CO ₂ e Scope 1 Emissions (metric tons) (CY)	34,762,588	40,374,877	41,184,773
305	Emissions	CLIMATE: TVA CO ₂ e Scope 2 Emissions (metric tons) (CY)	170,039	142,802	122,840

Category	Topic	Key Performance Metric Name	FY 2020	FY 2021	FY 2022
305	Emissions	CLIMATE: TVA CO ₂ e Scope 3 Emissions (metric tons) (CY) ³	66,967	68,467	57,573
305	Emissions	Air: TVA SO _x Emissions from TVA Owned Generation (metric tons) (CY)	17,082	25,226	22,331
305	Emissions	Air: TVA NO _x Emissions from TVA Owned Generation (metric tons) (CY)	12,577	15,210	15,270
305	Emissions	Non-Generation Fugitive CO ₂ e Emissions: Sulfur Hexafluoride (metric tons) (CY)	35,541	74,619	62,133
305	Emissions	Air: TVA Mercury Emissions from TVA Owned Generation (kg) (CY)	17.50	22.26	39.17
306	Effluents and Waste	Non-hazardous Municipal Solid Waste Diversion (% diverted or recycled) ²	3.90	2.98	0.8
306	Effluents and Waste	Waste: Low-level radioactive waste disposal rate (ft3/MWh) (CY)	0.00197	0.002533	0.002798
306	Effluents and Waste	Waste: Amount of Hazardous Waste Disposed (metric tons) (CY)	93.13	50.10	32.00
307	Environmental Compliance	Compliance: Notice of Violations (NOV)	6	1	4
403	Occupational Health and Safety	Safe Workplace (RIR)	0.34*	0.26	0.44
403	Occupational Health and Safety	Lost Time Case Rate (OSHA)	0.10	0.04	0.07
403	Occupational Health and Safety	Days Away, Restricted, and Transfer (DART) rate (OSHA)	0.17	0.11	0.17
403	Occupational Health and Safety	Serious Injury Incident Rate (SIIR)	0.03	0.03	0.02
403	Occupational Health and Safety	Work-related Fatalities	0	0	1
404	Training and Education	Training for Career Advancement (hours/ employee)	64.02	68.65	70.16
404	Training and Education	Continuing Education Contributions (\$)	567,715	436,764	465,684
405	Diversity and Equal Opportunity	Military Share of Workforce (%)	18.10%	17.90%	17.54%
405	Diversity and Equal Opportunity	People of Color Share of Workforce (%)	11.00%	11.24%	11.81%
405	Diversity and Equal Opportunity	Women Share of Workforce (%)	20.10%	20.37%	20.78%
411	Rights of Indigenous Peoples	Tribal Engagement	36	57	38
413	Local Communities	Environmental & Community Engagement (# Group activities)	307	264	449
413	Local Communities	Environmental & Community Engagement (# Children participating)	2,615	26,777	3,800
413	Local Communities	Annual Tax Equivalent Payments (without FCA) (\$M) ⁸	552	500	512
413	Local Communities	Back-to-Business Credit Program (\$)	9,887,500	3,219,298	N/A
413	Local Communities	Community Care Fund (\$)	2,563,651	1,771,177	4,450,875
413	Local Communities	Employee Hours Volunteered (Hours)	4,400	2,637.5	1,800.8
413	Local Communities	Stakeholder Survey (%) ⁴	78.2%	78.3%	79.4%

Category	Topic	Key Performance Metric Name	FY 2020	FY 2021	FY 2022
413	Local Communities	Customer Loyalty (VOC Survey Results) ⁴	70.7%	70.3%	71.3%
413	Local Communities	Media Tone (Positive and Neutral) ⁴	85.3%	85.7%	83.3%
414	Supplier Social Assessment	Sustainable Acquisition Progress – Obligations in Dollars containing Statutory Environmental Requirements (% of contract dollars with environmental clauses)	89.3%	96.7%	97.5%

¹ Revised due to reclassifications

² Does not include construction and demolition waste

³ These are partial Scope 3 CO₂e rates

⁴ Three-year average, not annual rate

⁵ Customer count is based on meters in accordance with the definition on Form EIA-861 Annual Electric Power Industry Report.

⁶ Caledonia Combined Cycle Plant is currently a leased facility operated by TVA.

⁷ Construction Expenditures based on Statement of Cash Flows

⁸ Revised from previous reporting to address errors.

New and Retained Job Definitions

“New jobs” in the TVA fiscal year are newly created, paid positions at a facility of a TVA customer. “Positions” are calculated by adding (1) the number of full-time, on-site employees and/or independent contractors at the facility, (2) the total number of full-time work-from-home employees and independent contractors who reside in the TVA service territory and who spend 100% of their work time on facility-related matters, and (3) the total hours worked on facility-related matters by (a) full-time and part-time on-site employees at the facility and full-time and part-time work-from-home employees who reside in the TVA service territory and (b) who spend less than 100% of their work time on facility-related matters, divided by the number of work hours of such employees based on a 40 hour work week. A “TVA customer” means an entity that purchases power from TVA or a distributor of TVA power. New jobs reported by TVA may include positions created during the current TVA fiscal year and certified projections of anticipated positions to be created within a five-year time frame. New job numbers reported by TVA are certified and provided to TVA by TVA customers.

“Retained jobs” are paid positions at a facility of a TVA customer that were created prior to the current TVA fiscal year and that continue to be filled in the current TVA fiscal year. “Positions” are calculated by adding (1) the number of full-time, on-site employees and/or independent contractors at the facility, (2) the total number of full-time work-from-home employees and independent contractors who reside in the TVA service territory and who spend 100% of their work time on facility-related matters, and (3) the total hours worked on facility-related matters by (a) full-time and part-time on-site employees at the facility and full-time and part-time work-from-home employees who reside in the TVA service territory and (b) who spend less than 100% of their work time on facility-related matters, divided by the number of work hours of such employees based on a 40 hour work week. A “TVA customer” means an entity that purchases power from TVA or a distributor of TVA power. Retained job numbers reported by TVA are certified and provided to TVA by TVA customers. All statistics reported are based on best available data.

Appendix B - Sustainability Accounting Standards Board (SASB) Metrics

Code	Topic	Metric	FY 2022
IF-EU-110a.1	Greenhouse Gas Emissions & Energy Resource Planning	(1) Gross global Scope 1 emissions (Metric Tons)	41,184,773
IF-EU-110a.1	Greenhouse Gas Emissions & Energy Resource Planning	(2) Percentage covered under emissions-limiting regulations	0%
IF-EU-110a.1	Greenhouse Gas Emissions & Energy Resource Planning	(3) Percentage covered under emissions-reporting regulations	100%
IF-EU-110a.2	Greenhouse Gas Emissions & Energy Resource Planning	Greenhouse gas (GHG) emissions associated with power deliveries (Metric Tons)	48,850,518
IF-EU-110a.3	Greenhouse Gas Emissions & Energy Resource Planning	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	TVA has achieved a 54% reduction in mass carbon emissions since 2005 (system emissions include owned and purchased power). TVA sees a path to about 80% reduction by 2035 and aspires to achieve net-zero carbon emissions by 2050. Strategic Intent and Guiding Principles Federal Sustainability Report and Implementation Plan
IF-EU-110a.4	Greenhouse Gas Emissions & Energy Resource Planning	(1) Number of customers served in markets subject to renewable portfolio standards (RPS)	TVA serves about 9,000 customers in North Carolina, which covers 6% of the service area and is the only state in the service area with an RPS.
IF-EU-110a.4	Greenhouse Gas Emissions & Energy Resource Planning	(2) Percentage fulfillment of RPS target by market	100%
IF-EU-120a.1	Air Quality	Air emissions of the following pollutants: (1) NO _x (excluding N2O) (Metric Tons)	15,269.79
IF-EU-120a.2	Air Quality	(2) SO _x (Metric Tons)	22,331.49
IF-EU-140a.1	Water Management	(1) Total water withdrawn (Thousand cubic meters)	12,033,731
IF-EU-140a.1	Water Management	(2) Total water consumed (Thousand cubic meters)	88,215.26
IF-EU-140a.1	Water Management	(3) Percentage of water drawn and consumed in regions with High or Extremely High Baseline Water Stress	0
IF-EU-140a.2	Water Management	Number of incidents of non-compliance associated with water quantity and/or quality permits, standards and regulations	11
IF-EU-140a.3	Water Management	Description of water management risks and discussion of strategies and practices to mitigate those risks	Climate Action Adaption and Resiliency Plan Water Use in the Tennessee Valley Study
IF-EU-150a.1	Coal Ash Management	(1) Amount of coal combustion residuals (CCR) generated (Metric Tons)	1,504,414
IF-EU-150a.1	Coal Ash Management	(2) Percentage recycled	82%
IF-EU-150a.2	Coal Ash Management	Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment	CCR Rule Compliance Data and Information
IF-EU-240a.1	Energy Affordability	Average retail electric rate for residential customers	12.11 cents/kWh



Code	Topic	Metric	FY 2022
IF-EU-240a.1	Energy Affordability	Average retail electric rate for commercial customers	11.84 cents/kWh
IF-EU-240a.1	Energy Affordability	Average retail electric rate for industrial customers	5.90 cents/kWh
IF-EU-240a.4	Energy Affordability	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	Annual Report Connected Communities (tva.com) TVA Agency Equity Action Plan (EO 13985) 2022
IF-EU-320a.1	Workforce Health & Safety	(1) Total recordable incident rate (TRIR)	0.44
IF-EU-320a.1	Workforce Health & Safety	(2) Fatality rate	0.0096%
IF-EU-420a.3	End-Use Efficiency & Demand	Customer electricity savings from efficiency measures, by market (MWh)	37,708
IF-EU-540a.1	Nuclear Safety & Emergency Management	Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission (NRC) Action Matrix Column	TVA operates seven nuclear power units at three sites; all units are in the Licensee Response Column of the NRC Action Matrix.
IF-EU-540a.2	Nuclear Safety & Emergency Management	Description of efforts to manage nuclear safety and emergency preparedness	As TVA operates its nuclear fleet safely and efficiently, it is investing in projects to continue to improve safety, increase power output and extend unit operating life. TVA's nuclear plants have multiple safety systems in place to keep the TVA workforce and the communities it serves safe. Safety systems include physical barriers that protect against radiation release and layers of redundant and diverse backup power systems to keep reactors sufficiently cooled – even in the most extreme or unlikely events. Additionally, the plants operate with oversight by the U.S. Nuclear Regulatory Commission, which has inspectors physically stationed at each site.
IF-EU-550a.1	Grid Resiliency	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	Physical noncompliance incidents: 1 Cyber noncompliance incidents: 8

Appendix C - TVA Alignment with Disclosure Standards

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Environment	Economic	Social	Governance	Section Title	Page	Supporting Information
Global Reporting Initiative (GRI) Criteria								
2	General Disclosures				✓	TVA's Approach to Sustainability	8	About TVA The TVA Act
3	Material Topics				✓	TVA's Approach to Sustainability	8	Sustainability
201	Economic Performance		✓			Economic Development Leadership	48	Financial Statements SEC Filings
202	Market Presence		✓	✓		Community Leadership	56	DEIA Report Public Power Partnerships
203	Indirect Economic Impacts		✓			Economic Development Leadership	48	TVA Economic Development Flood Damage Reduction
204	Procurement Practices		✓			Economic Development Leadership	48	Supplier Diversity Metrics Supplier Code of Conduct
205	Anti-Corruption				✓	Governance Leadership	70	TVA Code of Conduct Executive Code of Conduct Board Code of Conduct
206	Anti-Competitive Behavior				✓	Governance Leadership	70	Board Code of Conduct Executive Code of Conduct OIG Semiannual Reports
207	Tax		✓			Economic Development Leadership	48	2022 Tax Equivalent Payments 10-K: Tax Equivalents
301	Materials	✓	✓			Environmental Leadership	32	Coal Ash Federal Sustainability Plans
302	Energy	✓				Carbon Reduction Leadership	16	TVA OMB Scorecard EnergyRight® Highlights Report
303	Water and Effluents	✓				Environmental Leadership	32	TVA OMB Scorecard EEL ESG Report Managing the River
304	Biodiversity	✓				Environmental Leadership	32	Biodiversity Land Management
305	Emissions	✓				Environmental Leadership	32	Strategic Intent and Guiding Principles Air Quality
306	Effluents and Waste	✓				Environmental Leadership	32	Water Quality Coal Ash
307	Environmental Compliance	✓				Environmental Leadership	32	Environmental Reviews
308	Supplier Environmental Assessment	✓	✓			Economic Development Leadership	48	Green Procurement Federal Sustainability Plans Supplier Code of Conduct
401	Employment			✓	✓	Community Leadership	56	Benefits and Quality of Life 10-K: Human Capital Management



Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Environment	Economic	Social	Governance	Section Title	Page	Supporting Information
402	Labor/Management Relations			✓		Community Leadership	56	Expressing Concerns and Differing Views
403	Occupational Health and Safety			✓		Community Leadership	56	Safety Policy TVA Code of Conduct
404	Training and Education			✓		Community Leadership	56	10-K: Human Capital Management
405	Diversity and Equal Opportunity			✓	✓	Community Leadership	56	DEIA Report Equal Employment Opportunity Policy
406	Non-discrimination			✓	✓	Community Leadership	56	DEIA Report Equity Action Plan No Fear Act Notice
407	Freedom of Association and Collective Bargaining			✓	✓	Community Leadership	56	DEIA Report Supplier Code of Conduct
408	Child Labor				✓	Governance Leadership	70	TVA Code of Conduct Supplier Code of Conduct
409	Forced or Compulsory Labor				✓	Governance Leadership	70	TVA Code of Conduct Supplier Code of Conduct
410	Security Practices			✓	✓	Governance Leadership	70	TVA Police 10-K: Key Initiatives
411	Rights of Indigenous Peoples			✓		Community Leadership	56	Cultural Resource Management Tribal Consultation Action Plan Sacred Sites MOU
413	Local Communities			✓		Community Leadership	56	DEIA Report Public Power Partnerships Get Involved, Stay Involved
414	Supplier Social Assessment		✓	✓		Economic Development Leadership	48	Supplier Code of Conduct Supplier Diversity Policy
415	Public Policy				✓	Governance Leadership	70	Board Code of Conduct Political Activity Policy
416	Customer Health and Safety			✓		Carbon Reduction Leadership	16	TVA Dam Safety Transmission Safety Nuclear Safety
417	Marketing and Labeling			✓		Community Leadership	56	TVA Code of Conduct
418	Customer Privacy			✓	✓	Governance Leadership	70	TVA Privacy Policy




Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Environment	Economic	Social	Governance	Section Title	Page	Supporting Information
Sustainability Accounting Standards Board (SASB) Criteria								
IF-EU-110a	Greenhouse Gas Emissions and Energy Resource Planning	✓	✓		✓	Carbon Reduction Leadership	16	Strategic Intent and Guiding Principles Carbon Report Federal Sustainability Plans
IF-EU-120a	Air Quality	✓				Environmental Leadership	32	Air Quality
IF-EU-140a	Water Management	✓		✓		Environmental Leadership	32	Water Quality Managing Water Supply
IF-EU-150a	Coal Ash Management	✓		✓		Environmental Leadership	32	Coal Ash CCR Rule Compliance
IF-EU-240a	Energy Affordability		✓	✓		Economic Development Leadership	48	TVA Rates Strength and Stability
IF-EU-320a	Workforce Health and Safety			✓		Community Leadership	56	TVA Code of Conduct Safety Policy
IF-EU-420a	End-Use Efficiency and Demand		✓	✓		Community Leadership	56	EnergyRight® EnergyRight® and TVA Green Highlights
IF-EU-540a	Nuclear Safety and Emergency Management			✓	✓	Governance Leadership	70	Nuclear Safety Emergency Preparedness
IF-EU-550a	Grid Resiliency		✓			Carbon Reduction Leadership	16	Protecting the Grid Resilience at TVA
United Nations Sustainable Development Goals (UN SDGs)								
1	No Poverty		✓	✓		Economic Development Leadership, Community Leadership	48 56	Community Support & Assistance Community Relations Mission of Service
2	Zero Hunger		✓	✓		Environmental Leadership, Community Leadership	32 56	DEIA Report EnergyRight® Indoor Agriculture Incentives Shade Your Stream
3	Good Health and Well-Being	✓		✓		Carbon Reduction Leadership, Community Leadership	16 56	Community Support & Assistance EnergyRight® UVGI Incentives Connected Communities Environmental Stewardship
4	Quality Education			✓		Community Leadership	56	TVA STEMready STEM Classroom Grants TVA Kids School Uplift Do Good Here
5	Gender Equality			✓		Community Leadership	56	DEIA Report Employee Resource Groups Equal Employment Opportunity Policy
6	Clean Water and Sanitation	✓		✓		Environmental Leadership	32	Managing Water Supply Water Use in the Tennessee Valley Reservoir Health Ratings

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Environment	Economic	Social	Governance	Section Title	Page	Supporting Information
7	Affordable and Clean Energy		✓	✓		Carbon Reduction Leadership, Community Leadership	16 56	Tennessee Valley Renewable Energy TVA EnergyRight® TVA Strategic Intent and Guiding Principles
8	Decent Work and Economic Growth		✓	✓		Economic Development Leadership, Community Leadership	48 56	TVA Economic Development TVA sites.com Better Place to Live, Work and Play
9	Industry, Innovation and Infrastructure		✓			Carbon Reduction Leadership, Economic Development Leadership	16 48	TVA Strategic Intent and Guiding Principles TVA New Nuclear Program Energy System of the Future
10	Reduced Inequalities		✓	✓		Community Leadership	56	DEIA Report Equity Action Plan Employee Code of Conduct
11	Sustainable Cities and Communities		✓	✓		Community Leadership	56	Connected Communities Action Plan for EO 13175 Natural Resource Plan Boone Dam Project
12	Responsible Consumption and Production	✓				Carbon Reduction Leadership, Economic Development Leadership	16 48	Federal Sustainability Plans Coal Ash TVA Reports
13	Climate Action	✓				Carbon Reduction Leadership	16	Carbon Report Federal Sustainability Plans TVA Strategic Intent and Guiding Principles
14	Life Below Water	✓				Environmental Leadership	32	Trout Fishing the TVA Tailwaters Fishing the Valley Reservoir Health Ratings
15	Life on Land	✓				Environmental Leadership	32	TVA Environmental Policy TVA Biodiversity Policy Stewardship Projects
16	Peace, Justice and Strong Institutions				✓	Governance Leadership	70	Get Involved, Stay Involved TVA Code of Conduct Executive Code of Conduct Supplier Code of Conduct
17	Partnerships for the Goals				✓	Carbon Reduction Leadership	16	Connected Communities Public Power Partnerships Innovation & Research

✓ = secondary emphasis
✓ = primary emphasis

Appendix D - Supplemental United Nations Sustainable Development Goals

TVA has identified 10 out of the 17 UN SDGs that are most fundamental to its mission of service, described on page 10 of this Sustainability Report; however, TVA’s mission indirectly supports all 17 global goals. Alignment between TVA sustainability and the seven SDGs it indirectly supports is presented below.

UN SDG	TVA Alignment	TVA Priority Issues	TVA Aspirational Goals	FY 2022 Actions
	TVA was created to lift the Tennessee Valley region from the depths of the Great Depression of the 1930s. Today, TVA remains committed to the communities it serves. In addition to providing electricity at the lowest feasible cost, TVA strives to be a trusted neighbor through corporate giving , employee volunteer efforts, assisting with recovery efforts in the wake of natural disasters, and providing programs that give support and assistance to those in need.	<ul style="list-style-type: none">Energy AffordabilityCommunity Vitality and Engagement	<ul style="list-style-type: none">Continue Delivering Affordable Electricity Rates (Best-Quartile Nationally)Increase Investment in Energy Efficiency for Underserved Residents and Communities	<ul style="list-style-type: none">Residential rates lower than 70% of the top 100 U.S. utilities and industrial rates lower than 90% (based on Sept. 30, 2022, 12-month rolling average from U.S. Energy Information Administration)Donated over \$9 million in community contributions to organizations across the region, including \$1.3 million to disaster reliefHelped restore impacted communities by providing immediate and long-term support after the February 2022 ice storms in Western Tennessee, December 2022 tornados in Western Kentucky, and other natural disasters
	The Tennessee Valley region faces higher rates of food insecurity than other parts of the country. In partnership with local nonprofit organizations, TVA fights hunger in the communities it serves through corporate contributions , food drives, and employee volunteer efforts. TVA also supports resilient, sustainable agriculture through ongoing engagement with the region’s farmers, erosion prevention programs that support soil health and water quality, and incentives for food system innovations such as indoor agriculture.	<ul style="list-style-type: none">Flood and Drought ManagementEnergy Affordability	<ul style="list-style-type: none">Prioritize Social and Environmental Justice for Impacted CommunitiesEnhance Safety and Well-Being of TVA Employees and the People of the Region	<ul style="list-style-type: none">Distributed over 8 million meals to families in need in 2022 through TVA’s partnership with Feeding AmericaDonated \$600,000 to health, hunger and housing initiatives, supporting projects like TVA’s partnership with Mid-South Food Bank to create healthy school pantries in Memphis schoolsThe TVA Boone Dam team volunteered with regional LPC partners to serve in mobile food banks throughout the duration of the project and collected 157,000 tons of foodPlanted 3,000+ feet of streambank vegetation, which helps prevents erosion and protect water quality
	Protecting public health is a priority for TVA. In the face of diseases like COVID-19, TVA is working with its LPC partners to incentivize innovation in disease prevention and to support economic recovery in the pandemic’s aftermath. TVA also strives to protect both environmental and human health by investing in clean air and clean water for the region through responsible waste management and aggressive pollution control.	<ul style="list-style-type: none">Health and SafetyWaste Management	<ul style="list-style-type: none">Prioritize Social and Environmental Justice for Impacted CommunitiesEnhance Safety and Well-Being of TVA Employees and the People of the Region	<ul style="list-style-type: none">Continued support through the Community Care Fund with over \$4 million provided in 2022 to support local initiatives that address hardships created by the COVID-19 pandemicProvided a 2.5% monthly base rate credit, the Pandemic Recovery Credit, that applies to service provided to TVA’s LPCs, their large commercial and industrial customers, and TVA’s directly served customers, totaling \$228 million for 2022Invested \$6.8 billion to date to improve air quality in the Tennessee Valley region through emission controls

UN SDG	TVA Alignment	TVA Priority Issues	TVA Aspirational Goals	FY 2022 Actions
	Inclusive and equitable education is an important part of TVA's mission to give the people of the Tennessee Valley region a better opportunity to thrive. TVA's educational programs focus on building the workforce of tomorrow by introducing students to STEM skills that offer steady, well-paid careers right here in the Tennessee Valley region. TVA provides educational resources online and in-person for students of all socioeconomic backgrounds, genders and abilities. For college students and lifelong learners, TVA's CADnet School to Work program, Intern Program and entry-level training courses provide paid, impactful educational opportunities that go beyond the classroom.	<ul style="list-style-type: none">Community Vitality and EngagementSkilled Workforce Availability	<ul style="list-style-type: none">Continue to Attract and Grow Investments and Jobs That Power the Region's EconomyAdvance Employee and Community Workforce DevelopmentCreate a Talent-Focused Organization That Delivers Performance and Service	<ul style="list-style-type: none">Awarded \$1 million in STEM grants in partnership with Bicentennial Volunteers IncorporatedContributed \$2.9 million to education initiatives across the seven-state service regionSupported 43 public schools with energy efficiency grants and training through EnergyRight School Uplift, saving each school an estimated \$7,700 annuallyCollaborated with universities, trade schools and union partners to expand recruiting efforts in diverse communitiesConnected with 3,800 children through environmental education and outreach events
	Diversity, Equity, Inclusion and Accessibility is an integral part of how TVA does business. TVA works to advance gender equality in the communities it serves through outreach and advocacy , Supplier Diversity initiatives and more. To attract, develop and retain top talent reflective of the communities it serves, TVA is partnering to build a more diverse talent pipeline and taking steps to advance equity in the compensation structure, benefits packages and advancement opportunities TVA offers its workforce.	<ul style="list-style-type: none">Diversity and InclusionRecruitment, Development and Retention	<ul style="list-style-type: none">Enhance Supplier Diversity Program Support for Women-Owned, Minority-Owned and Veteran-Owned BusinessesAccelerate Impact of Inclusion with Diversity within TVA and the Communities it Serves	<ul style="list-style-type: none">Established representation goals aimed at increasing the number of women and people of color in leadership to match the available workforce by 2033Hired a third-party firm to conduct an independent review of TVA DEIA practices and began addressing gapsTVA Employee Resource Group Women Empowered continued to support women in the TVA workforce and beyond through networking, developmental opportunities and community outreach initiativesLaunched the Ready Now supplier university program to help diverse small business owners prepare to work with TVA
	As stewards of a region with some of the highest aquatic biodiversity in the world, TVA is committed to sustainable management of the Tennessee River and the fisheries it provides. TVA biologists conduct annual sampling in streams and reservoirs across the watershed and work with its partners to protect and expand populations of threatened aquatic species. TVA monitors and adjusts river flow to maintain healthy conditions for aquatic life and human needs, ensuring future generations can enjoy the same world-class aquatic resources the Tennessee River provides today.	<ul style="list-style-type: none">Water Quality and AvailabilityHabitat and Biodiversity ProtectionReservoir and Stewardship Benefits	<ul style="list-style-type: none">Continue to Protect the Tennessee River System's Natural Habitats and BiodiversityContinue to Support \$12 Billion in Sustainable Recreational Activities on Public Lands and WatersContinue to Improve Integrated Environmental Footprint (Air, Water, Waste, Land, Biodiversity)	<ul style="list-style-type: none">Partnered with Conservation Fisheries to help propagate and reintroduce at-risk fish species like the sickle darter and boulder darter in streams to reestablish viable populations for the futureProvided funding to numerous partners in the Little Tennessee Native Fish Conservation Partnership to help projects including riparian buffer establishment, mussel releases, and aquatic life assessmentsThe Tennessee River's world-class fisheries helped draw 160,000 people to the 2023 Bassmaster Classic held on Fort Loudoun and Tellico lakesReached a total of 45 marinas certified as Tennessee Valley Clean Marinas to recognize efforts to protect water quality

UN SDG	TVA Alignment	TVA Priority Issues	TVA Aspirational Goals	FY 2022 Actions
	At TVA, partnerships are everything — with local power companies, directly served customers, industry partners, governments, communities and schools. We are stronger together. TVA continues to work to establish and strengthen partnerships that enable the development of tools, processes, projects and understanding to drive a sustainable future in the Tennessee Valley region and beyond.	<ul style="list-style-type: none">Local Power Company PartnershipsSupplier PartnersCommunity Vitality and Engagement	<ul style="list-style-type: none">Strengthen Partnerships with Local Power Companies and Direct-Served Customers	<ul style="list-style-type: none">Partnered with 153 local power companies to supply electricity to approximately 10 million people across seven Southeastern states and 58 directly served customersImplemented TVA's regional model to strengthen partnerships with local organizations and better align priorities and resources to meet communities' needsContinued to work with numerous partners on research and innovation initiatives to drive economy-wide carbon reduction, from electric vehicle deployment to small modular nuclear reactor development

Appendix E – Sustainability-Related Disclosures, Plans and Policies

To meet both stakeholder expectations and federal obligations, TVA reports its sustainability performance, goals and strategies through numerous platforms. These publications reflect TVA’s emphasis on transparency and accountability.

FEDERAL REPORTING

Federal Sustainability Report and Implementation Plan (SRIP): TVA maintains the SRIP consistent with the applicable Executive Orders (EO) and regulations that establish and assess federal sustainability goals, including [EO 14057](#), [EO 14008](#), and the remaining sections of [EO 13834](#). The objective of TVA’s Federal Sustainability Program is to reduce the non-power block component of the TVA environmental footprint as a federal agency, including buildings, fleet, and procurement. Read more at [Federal Sustainability Plans and Performance](#).

Climate Action Adaption and Resiliency Plan: TVA maintains the Climate Action Adaption and Resiliency Plan as a cohesive part of its major planning processes consistent with [EO 14008](#). Climate adaption and resiliency planning allows TVA to address the actions that help better understand climate trends and possible risk. Read more about the [2021 Climate Adaption Plan](#) and [2022 Progress Update](#).

Equity Action Plan: TVA has submitted an Agency Equity Action Plan consistent with [EO 13985](#), which directs the federal government to revise agency policies to account for racial inequities in their implementation. The Plan highlights TVA’s accomplishments around advancing racial equity, support for underserved communities and its plans to address and remove barriers in the near- and long-term. Read more about the [Equity Action Plan](#).

Tribal Consultation Action Plan: Consistent with the [Presidential Memorandum](#) on Tribal Consultation and Strengthening Nation-to-Nation Relationships and [EO 13175](#), TVA has prepared an action plan in consultation with federally recognized Native American Tribes. As a federal agency, TVA is committed to work with Tribes within the framework of a government-to-government relationship. Read more about the [Tribal Consultation Action Plan](#).

National Environmental Policy Act (NEPA) Disclosures: TVA conducts environmental reviews in accordance with the National Environmental Policy Act, which requires federal agencies to consider the effects of certain proposed projects on the human and natural environment before final decisions are made. Read more at [Environmental Reviews](#).

Freedom of Information Act (FOIA) Disclosures: As a federal agency, TVA is required under the Freedom of Information Act to disclose records that any person requests in writing, subject to certain exceptions such as information covered by national security and law enforcement-related exclusions. TVA releases annual and quarterly reports of FOIA requests, as well as guidelines for new requests, online. Read more at [Freedom of Information Act](#).

Securities and Exchange Commission (SEC) Reporting: TVA files quarterly (10-Q) and annual (10-K) reports with the SEC. These reports contain financial, operational and descriptive information, as well as an analysis of material risks. Access current and historical TVA SEC filings at [SEC Filings](#).

VOLUNTARY REPORTING

Global Reporting Initiative (GRI) Standards: The GRI standards form the backbone of the TVA Sustainability Report. GRI is a recognized international framework for economic, environmental and social performance disclosure that guides reporting companies to report comprehensive information regarding the sustainability issues most significant to their operations. Review TVA’s performance in selected GRI metrics in [Appendix A](#) of this Sustainability Report.

Sustainability Accounting Standards Board (SASB) Standards: The SASB standards are intended to increase accessibility to the sustainability information most significant to the financial community. TVA began reporting with this framework in 2022 to enable communication to investors about how sustainability issues impact long-term enterprise value. Review TVA’s SASB index in [Appendix B](#) of this Sustainability Report.

United Nations Sustainable Development Goals (UN SDGs) Framework: The SDGs are ambitious global goals adopted by the UN Council for Sustainable Development as a universal call to action for social justice, environmental stewardship and equitable economic development. TVA has identified 10 priority SDGs where its mission and aspirations have the most opportunity for direct impact, but TVA strives to support all 17 goals. Read more about [TVA’s Priority UN SDGs](#) and [TVA’s Supported UN SDGs](#) in this Sustainability Report.

Edison Electric Institute (EEI) - Environmental, Social and Governance (ESG) Template: TVA publishes ESG reports for the financial community using the utility-focused and investor-driven reporting template developed by EEI. The EEI ESG report template provides information in a measurable and consistent format for investors and customers to accurately assess long-term sustainability progress. Read more at [EEI-ESG](#).

Diversity, Equity, Inclusion and Accessibility (DEIA) Report: DEIA is an integral part of how TVA does business, and TVA is taking deliberate steps to identify and close gaps. The DEIA Report builds upon TVA’s transparency efforts by providing insight into initiatives and performance in this vital area. The report details TVA’s progress to advance DEIA both internally and externally in the communities it serves. Read more at [DEIA Report](#).

Carbon Report: TVA is committed to providing cleaner, reliable and affordable energy in the Tennessee Valley region and engaging in environmental stewardship in a balanced and ecologically sound manner. The Carbon Report provides a framework for TVA’s carbon reduction strategy through innovation in energy technology, energy delivery, natural resource stewardship, the TVA fleet and the region. Read more at [Carbon Report](#).

STRATEGIC PLANS AND POLICIES

Environmental Policy: TVA’s overarching Environmental Policy is to produce increasingly clean, reliable and affordable power, support sustainable economic growth in the Tennessee Valley region and promote proactive environmental sustainability in a balanced and ecologically sound manner. Read more at [TVA Environmental Policy](#).

Biodiversity Policy: The Biodiversity Policy states that TVA will proactively protect biodiversity through continued stewardship of public lands, management of the Tennessee River system, local and regional partnerships, and the integration of species and habitat conservation across project planning. Read more at [TVA Biodiversity Policy](#).

Integrated Resource Plan (IRP): Building on TVA’s service commitment, the IRP provides a roadmap for making decisions about how TVA can meet future demand for power in new and innovative ways over the next 20 years. Considering costs, environmental factors, reliability, regulations and energy efficiency, the plan helps determine how TVA’s energy portfolio will look in the future. Read more at [Integrated Resource Plan](#).

Natural Resource Plan (NRP): The NRP describes a broad range of programs across 10 focus areas to direct TVA’s management of the public lands and waters within its power service area and the Tennessee River watershed. The NRP is a strategic level document that will guide the direction of TVA’s resource stewardship over the next 20 years. Read more at [Natural Resource Plan](#).

Strategic Intent and Guiding Principles: TVA’s strategic intent and guiding principles outline TVA’s intent to align its people, operational and innovation efforts to business strategies that provide affordable, reliable, resilient, and clean energy to the Tennessee Valley region. Focused on energy supply and decarbonization initiatives, the document provides a framework for responsible carbon reduction strategies and establishes a series of milestones on TVA’s path to net zero by 2050. Read more at [TVA Strategic Intent and Guiding Principles](#).

Code of Conduct: In addition to electricity, TVA “generates trust” by setting and following high ethical standards. TVA’s Code of Conduct documents are intended to inspire, guide and enable the best performance of TVA and its suppliers. By setting standards and by providing guidance in line with TVA’s Values, the Code helps TVA build a strong ethical culture and achieve its business goals with integrity. Read more about TVA’s [Employee Code of Conduct](#), [Board Code of Conduct](#) and [Supplier Code of Conduct](#).

Appendix F - Reconciliation Table

	Sept. 30, 2020	Sept. 30, 2021	Sept. 30, 2022
Total outstanding debt	\$20,889	\$20,314	\$20,034
Exchange gain	153	58	150
Unamortized discounts, premiums, issue costs and other	131	122	132
Notes payable	-	-	-
Debt of variable interest entities	(1,098)	(1,056)	(1,013)
Bonds and Notes, Gross	\$20,075	\$19,438	\$19,303
Notes payable	-	-	-
Leaseback obligations	223	25	-
Membership interests of variable interest entity subject to mandatory redemption	25	24	20
Debt of variable interest entities	1,098	1,056	1,013
Total Debt and Other Financing Obligations, Gross (“TFO”)	\$21,421	\$20,543	\$20,336
Cash and Cash Equivalents	(500)	(499)	(500)
Total Debt and Other Financing Obligations, Gross (“TFO”), net of Cash and Cash Equivalents	\$20,921	\$20,044	\$19,836

Note numbers may be adjusted for rounding.

Appendix G - External Awards

- **2022 Ethisphere® Compliance Leader Verification™** - First federal agency to receive this certification
- **Inclusion by Design Award** - Urban League of Greater Chattanooga, Inc.
- **Ranked among the Top 15 Best Employers by State for 2022** - By Forbes magazine for the fourth consecutive year
- **2022 Diversity Impact Awards™: Top 10 Diversity Action Award** - Talent Dimensions and the Global ERG Network
- **2022 Leading Disability Employer** - National Organization on Disability
- **2022 DiversityInc Top Companies for Utilities List** - Ranked No. 4
- **2022 VETS Indexes 5 Star Employer**
- **2022 Military Friendly® Employers** - Ranked No. 3
- **2022 Military Friendly® Supplier Diversity Program Award** - Ranked No. 1; Top 10, three years in a row
- **2022 Military Friendly® Spouse Friendly Employers Award**
- **Cleanest power system in the Southeast as a percent of net generation** - based on Edison Electric Institute’s June 2022 Electric Company Carbon Emissions and Electricity Mix Reporting Database for Corporate Customers; clean power includes all nuclear, hydroelectric and renewable generation and renewable purchased power sources
- **2022 Top Utilities in Economic Development** – Site Selection magazine for the 17th consecutive year

Appendix H - Acronyms List

CBS - Columbia Broadcasting System	HVAC - Heating, Ventilation and Air Conditioning
CCR - Coal Combustion Residuals	lwD - Inclusion with Diversity
CEO - Chief Executive Officer	KUB - Knoxville Utilities Board
CY - Calendar Year	kWh - Kilowatt Hour
D4 - Decommissioning, De-activation, Decontamination, Demolition	LED - Light-Emitting Diode
DEI - Diversity, Equity and Inclusion	LPC - Local Power Company
DEIA - Diversity, Equity, Inclusion and Accessibility	NAGPRA - Native American Graves Protection and Repatriation Act
DOE - Department of Energy	NEPA - National Environmental Policy Act
EPA - Environmental Protection Agency	NO_x - Nitrogen Oxides
EPRI - Electric Power Research Institute	NRC - Nuclear Regulatory Commission
ERC - Enterprise Risk Council	MW - Megawatt
ERG - Employee Resource Group	RFP - Request for Proposal
ESG - Environmental, Social and Governance	SMR - Small Modular Reactor
EV - Electric Vehicle	SO₂ - Sulfur Dioxide
FBI - Federal Bureau of Investigation	STEM - Science, Technology, Engineering, and Mathematics
FY - Fiscal Year	TDEC - Tennessee Department of Environment and Conservation
GE - General Electric	TVA - Tennessee Valley Authority
GHG - Greenhouse Gas	US - United States
GM - General Motors	UN SDGs - United Nations Sustainable Development Goals
GWh - Gigawatt Hour	
HEMS - Home Energy Management System	



TENNESSEE
VALLEY
AUTHORITY

400 W. Summit Hill Drive
Knoxville, TN 37902

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