



TVA Sustainability
Today. Tomorrow. Together.

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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,” 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 the 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.

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Message from Our President & CEO



2021 marked a year of transformation and progress at TVA. We are positioned to lead the industry in creating a sustainable energy future – one we have been actively advancing for nearly 90 years.

Today, the challenges are different than those faced by those who came

before us, yet no less critical to the lives of the people we serve. It's clear our mission to serve the public good has stood the test of time.

Businesses around the globe are committed to sustainability and related environmental, social and governance (ESG) criteria. We believe these criteria not only align with our mission and core values but also play a key role in our long-term strategy.

Sustainability is deeply rooted in and across TVA's culture. It is an essential part of TVA's heritage of delivering innovative solutions that have helped transform our seven-state region – one that stretches across and beyond the Tennessee Valley. From our earliest days, we built dams to control flooding, produced electricity and created transmission infrastructure to bring the first electric lights to rural communities. Since that time, the fundamental parts of the TVA DNA have pushed us forward: our people and a focus on innovation.

Today, TVA is a recognized leader in pioneering cost-effective technologies that will help enable us to achieve our aspiration of a net-zero carbon energy future. We are decreasing carbon emissions – the numbers provide the proof. And we're doing so while maintaining our responsibility to deliver the reliable, low-cost energy our customers expect and deserve.

Our diverse and clean energy generation portfolio is a differentiator for TVA. We own and operate hydroelectric plants, renewable energy, natural gas facilities and the nation's third-largest nuclear fleet, which provide optimal flexibility.

And while this portfolio provides our customers with the reliability they expect, we recognize the need to keep pace with the changes across the industry. We are expanding renewable energy on our system – targeting up to 10,000 megawatts of solar by 2035. We are also focused on developing emerging technologies, including advanced nuclear technologies and utility-scale battery storage.

We aren't stopping at energy generation because sustainability encompasses so much more.

Our partnership with local power companies and state agencies is accelerating the adoption of electric vehicles (EVs) by removing barriers that prevent consumers from making the switch to EVs. We are developing a network of fast-charging stations at least every 50 miles along interstates and major highways across our seven-state service area. Our collective goal is to put more than 200,000 EVs on Tennessee Valley roadways by 2028.

TVA is also protecting and enhancing our waterways and natural resources through our expansive stewardship programs. We are investing time, talent and dollars to ensure the generations after us will be able to fully experience the beauty and resources of our region.

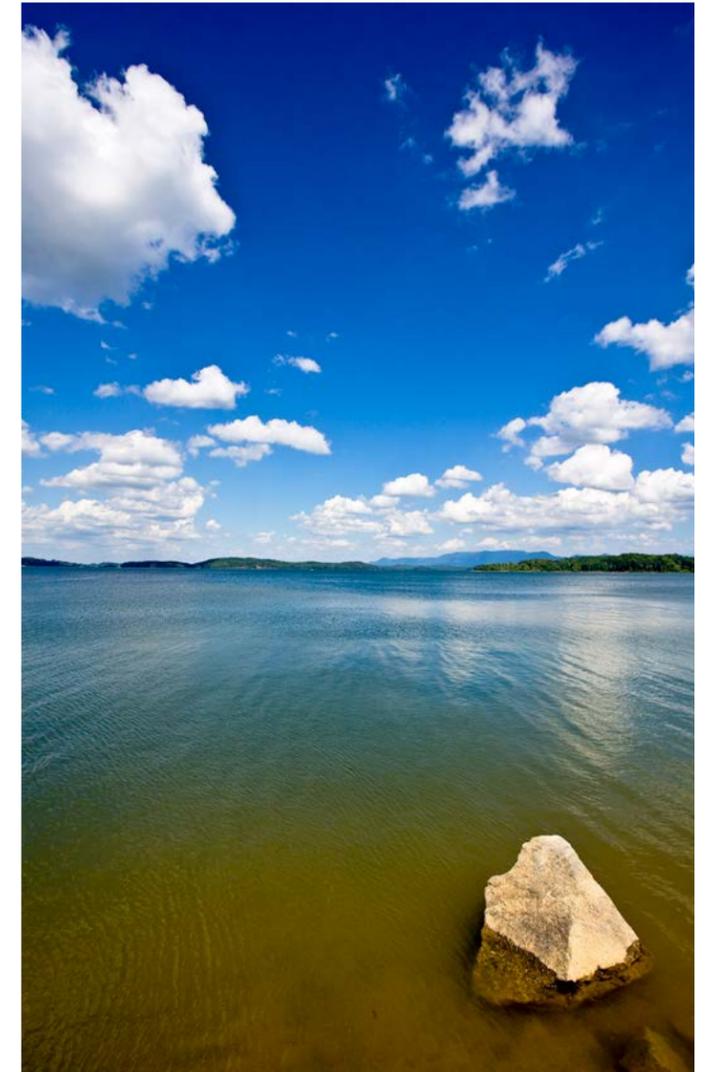
The vitality and growth of our region is underpinned by low-cost, reliable and clean energy. Over the past five years, TVA has worked with state and local partners to deliver about 350,000 jobs and \$45.9 billion in capital investments.

While business results are important, it's how those results are achieved that matters. TVA's values – Safety, Integrity, Inclusion and Service – are fundamental beliefs that guide our actions, behaviors and decisions as a company.

The strength of TVA is its people. Our experienced, talented workforce is committed to improving the quality of life for the communities and people we are privileged to serve. I am privileged to lead such a dedicated, passionate workforce – one that shows up every day and delivers time and time again. They have never failed to be there to serve and support.

At TVA, our strength lies in our collective power. We welcome your partnership in building a sustainable future for all who call our Valley home.

Jeff Lyash
President & CEO



Q&A with Our Chief Sustainability Officer

What does sustainability mean for TVA as the nation's largest public power provider?

TVA's public power model takes into account a broad view of the needs of people, which is the core of a sustainable company. Instead of being focused on shareholder profit, TVA reinvests back into the Valley's infrastructure, environment and people. You hear the terms "sustainability" and "ESG" in many corporate circles as including a company's environmental, social and economic impacts and opportunities. Our mission of service has always included these.

Our clear purpose of service to the Valley provides us a business advantage. Our durable mission inspires one of the best workforces in the country; and it puts us in a position of partnership with our customers and stakeholders where we serve together to find solutions. The annual Sustainability Report is a place for TVA to report on the broad value of our teams' work and to set forth our path to bring value long into the future.

Given its unique mission, how does TVA engage with stakeholders?

Partnerships and engagement are vital to moving forward. From working with stakeholders to drive the adoption of electric vehicles in the Valley to spearheading initiatives to enhance collaboration as partners navigate market transformation, TVA is committed to stakeholder engagement.

We also conduct specific activities at our facilities or within our transmission territory that impact communities. We hold numerous public meetings and have open public comment periods to provide information and receive public input.

We listen as stakeholders identify their sustainability priorities, and we discuss ways TVA can help create positive change.



Rebecca Tolene is TVA's Vice President, Environment, and Chief Sustainability Officer. She leads efforts around carbon reduction, utility sustainability and environmental performance. We wanted to ask her the questions we receive most often about TVA and its sustainability efforts.

What is TVA doing to reduce its carbon emissions?

Climate change is one of the major challenges that our nation and the world face today, and it must be responded to with innovation and urgency. Using effective planning and technologies available today, we have a plan to achieve 70% reduction in carbon emissions by 2030 and a path to ~80% by 2035. We aspire to achieve net-zero carbon emissions by 2050. Establishing aspirational targets is important because the gap between the aspirational targets and what's currently feasible drives innovation. We are a national leader in carbon reduction, but we aim to go further, faster.

We are collaborating with the industry and federal agencies to determine how we can accelerate that while also balancing the critical dimensions of energy service: cost, reliability, resiliency and carbon reduction.

At TVA we are outcome focused. We have a shared outcome that many stakeholders are working to achieve: a cleaner energy future – one that continues to prioritize cost, reliability and resiliency as we transition to innovative energy solutions. That's why we're investing in a menu of options — new nuclear, energy storage, connected communities, an extensive hydro fleet and expanding renewables on our system. We're also partnering with 153 local power companies across seven states to increase renewables on their systems as well.

Why is natural gas – a fossil fuel – part of TVA's clean energy transition plan?

Natural gas is a key part of our transition to net-zero carbon emissions and helps TVA ensure system reliability



during the upcoming generation changes.

Natural gas has far lower emissions than coal and is a flexible partner to the solar generation we are bringing onto the system today. It is ready to dispatch when the sun isn't shining and will support bringing the new generation technologies that are needed to reach net-zero online.

There is also ongoing work to reduce or eliminate carbon emissions of natural gas in the future through reducing flaring and minimizing methane leaks in gas pipelines, carbon capture technologies, and the possibilities of renewable natural gas or hydrogen blends.

We have an obligation to serve — and ensure the lights stay on. Our customers and the broader economy expect that of TVA — and frankly, of the larger utility industry. So, when renewables aren't available, natural gas will be available to ensure that reliable, resilient service is available to power our communities until additional carbon-free technologies can be developed and commercialized.

What is TVA doing to advance diversity and inclusion?

In recent years, we have elevated Inclusion as a Core Value, created a Chief Diversity & Inclusion Officer position, intensified our efforts to focus on Inclusion with Diversity and created a framework that is enhancing education, dialogue and engagement across the organization. Inclusion gets to the heart of making people feel valued, of helping them feel like they belong. Diversity of thought and background is going to be essential to developing the clean energy system of the future, and TVA is focused on ensuring that every employee can bring their true self to work each day and contribute to the fullest.

How does TVA support communities?

Serving the region's communities is an important part of our mission of service. This report highlights many of our community programs, from partnering with local power companies, to improving the safety and energy efficiency of homes for qualified low-income individuals, to providing environmental education that engages communities in caring for the environment.

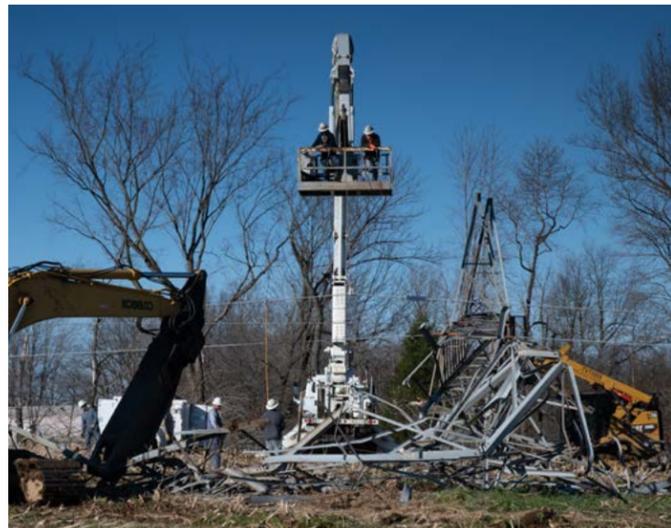
When the Tennessee Valley experiences severe weather, TVA is there to help. In 2021, after horrific flash flooding in Middle Tennessee and deadly tornados in Western Kentucky, TVA rallied to help the communities in every way possible. Our new regional operating model, which focuses on local partnerships and relationships in the Valley, helped us rapidly get boots on the ground to the places that needed it most. TVA engineers, operations and other staff supported crews heading into the field, and our crews worked 24/7 to restore the power system quickly. We also supported employees and community members in need through collection of food and supplies as well as through corporate donations.

These TVA initiatives, and so many more, improve life for everyone in the Valley.

Why does TVA issue an annual Sustainability Report?

Sustainability reporting, also called ESG reporting, is important to customers, potential employees, investors, contractors, clients and stakeholders. TVA uses the Global Reporting Initiative (GRI) standards, the most widely used reporting framework globally, to help meet the needs of stakeholders for comparable data. This year, we've also reported data utilizing the Sustainability Accounting Standards Board (SASB) framework as the preferred reporting standards for the investor community, which includes TVA bondholders.

With more and more stakeholder interest in sustainability and transparency, it's up to TVA to share what we are doing to meet our mission of service. Our Sustainability Report provides a transparent look at our impact and our growth opportunities. In fact, with this tool, TVA has connected transparently with collaborators, suppliers, public institutions, customers and community leaders, many of whom have sustainability goals of their own. The Sustainability Report is a way for TVA to talk about our work while striving to improve today, tomorrow and together.



Introduction

TVA's Unique Mission

At TVA, we have a unique mission – one rooted in service and pursuing innovative solutions that enrich and improve the quality of life for the communities and 10 million people we serve across the seven states of the Tennessee Valley. We are at the forefront of today's solutions, from building the energy system of the future to working with leading-edge partners as we aspire to reach net-zero carbon emissions.

As the largest public power provider in the United States and the third-largest electricity generator in the nation, we aim to provide:

- **Energy that is reliable, resilient, low-cost and clean**
- **Environmental Stewardship that protects and preserves public lands, water and air**
- **Economic Development to attract investment and create jobs in the region**

Our five Strategic Priorities – People Advantage, Operational Excellence, Financial Strength, Powerful Partnerships and Igniting Innovation – guide our long-term plans, and sustainability plays an integral role in each.

And as we pave the way to a clean energy future, our actions are guided by four Core Values — Safety, Integrity, Inclusion and Service. These foundational elements provide guideposts and help us sustain success.

We partner with 153 local power companies that supply electricity to about 10 million people. TVA also directly serves 57 customers – most of which are large industries or businesses.

But our work stretches far beyond generating energy. We actively enhance our environment and natural resources, providing flood management, recreational opportunities, protection of natural resources on public lands and waters, and community and economic development services.

TVA's public power mission is fundamentally different from that of investor-owned utilities. We are focused on investing in the Valley's infrastructure, environment and people, rather than protecting shareholders' financial interests.

Sustainability has always been a driving force at TVA, and always will be. Today, we're working together with our partners and stakeholders to build a sustainable tomorrow for the Tennessee Valley— for current and future generations.

TVA Mission, Strategic Priorities and Values

Our focus on sustainability strengthens our ability to safely provide reliable, low-cost and increasingly cleaner 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 safe, low-cost, reliable 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.

Our Approach to ESG/Sustainability

To deliver on our commitment to the people we serve, we build sustainability into everything we do – every decision we make, every project we undertake.

This effort doesn't happen overnight. It's been a decades-long commitment to creating a culture focused on best practices across environmental, social and governance (ESG) areas.

Our senior leaders support integrated sustainability planning, and this is evident in the business plans and long-term strategy we've developed. We routinely incorporate feedback from external advisory councils to also ensure we're understanding the issues most important to our customers and communities as well as the broader industry.

TVA's CEO-led Enterprise Leadership Team drives business strategy, including decisions relating to sustainability and risk management. TVA's Chief Sustainability Officer (CSO) oversees the enterprise-wide Environmental Executive Council, a Sustainability

Steering Committee and a Sustainability Working Group, which together are responsible for the governance of sustainability at TVA. The CSO is also a member of TVA's Risk Management Steering Committee. For more on governance, please turn to [page 62](#).

Our Sustainability Office uses a "team of teams" approach to ensure areas across the enterprise have accountability for their roles. TVA leadership encourages each business unit to outline sustainability objectives and priorities as well as sustainability goals and metrics.

TVA's sustainability work is categorized into four areas:

- **Economic Impact: Partnering to Build the Region's Clean Energy Economy**
- **Environment: Stewarding the Region's Resources**
- **Social: Serving People and Communities Across the Region**
- **Governance: Driving Progress through Accountability and Transparency**

Economic Impact <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 	Environment <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 	Social <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 	Governance <ul style="list-style-type: none"> ■ Transparency ■ Board and Executive Diversity ■ Systemic Risk Management ■ Ethics ■ Cyber and Physical Security ■ Sustainable Financing Framework
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ESG/SUSTAINABILITY STAKEHOLDERS



LPC Customers: Local power company customers
NGOs: Non-governmental organizations

Following the input process, we explored the impact of these issues on TVA and our service areas and discussed how influential TVA can be in creating positive change.

Recognizing the broad sweeping changes throughout 2021 – the COVID-19 pandemic, economic downturn, global social and political upheaval, and TVA's carbon reduction strategy announcements – we revisited the stakeholder input and updated the material items we should include in this year's report.

We also continue to adhere to requirements as a federal agency, including disclosures specific to federal directives and goals, such as the Climate Action Adaptation and Resiliency Plan and the Federal Sustainability Report and Implementation Plan. These plans are available on tva.com/sustainability.

As we look ahead, we will continue to adjust our disclosure approach and be responsive to the sustainability needs of our stakeholders.

Sustainability Aspirations

We are taking deliberate steps to identify what matters most to our stakeholders when it comes to sustainability and being transparent about our progress.

TVA has leveraged industry-accepted standards, including the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), which provide insight about sustainability issues the industry, stakeholders and policymakers deem to be important. These standards also contain guidance on how to disclose our performance in an effective and accessible format.

But we didn't stop there.

In 2019, we launched our first input process on TVA's sustainability program, soliciting direct feedback from those within and outside of TVA. We asked these individuals to prioritize the sustainability or ESG issues that most concern them. Some of those key topics included: power resiliency and affordability, carbon emissions, value of public lands and waters, and community support.

SUSTAINABILITY ASPIRATIONS AND PROGRESS

The United Nations' Sustainable Development Goals (UN SDGs) provide all nations with a framework for governments, industry and communities to build a sustainable future for the world. Though TVA strives to support achievement of all 17 UN SDGs, TVA has identified seven SDGs that our activities and mission most directly support. Alignment between these seven SDGs and TVA's aspirational goals and an update on progress made in fiscal year 2021 are presented on the next page.

The SDGs and other accepted global frameworks inform our sustainability strategic planning, decision-making and disclosure initiatives. Together with our partners and stakeholders, TVA is aligning with global goals and driving progress for the future of the Tennessee Valley.

UN SD Goals	TVA Priorities / Material Topic	Aspirational Goals
	<ul style="list-style-type: none"> Energy Affordability Renewable Energy 	<ul style="list-style-type: none"> Provide Reliable and Resilient Power System of the Future (Continue our 99.999% reliability) Continue Delivering Low-Cost Electricity Rates (Best-Quartile Nationally) 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) Add 10,000 Megawatts of Solar by 2035 to Meet Customer Demand and TVA System Needs Become the Nation's Top-Performing Nuclear Fleet by 2025 Increase Investment in Energy Efficiency for Underserved Residents and Communities Achieve 100% Sedan and SUV Electric Fleet by 2030
	<ul style="list-style-type: none"> Jobs Created and Retained Investor Relations Labor Relations Recruitment, Development and Retention Skilled Workforce Availability Health and Safety Cyber and Physical Security 	<ul style="list-style-type: none"> Continue to Attract and Grow Investments and Jobs That Power the Valley's Economy Accelerate Impact of Inclusion with Diversity Within TVA and the Communities We Serve Create a Talent-Focused Organization That Delivers Performance and Service Enhance Safety and Well-Being of TVA Employees and the People of the Valley Advance Employee and Community Workforce Development
	<ul style="list-style-type: none"> Energy Innovations Transparency Ethics 	<ul style="list-style-type: none"> Partner to Develop New Clean Energy Technologies for Deeper Decarbonization for Deployment in the 2030s and Beyond Build the Integrated and Reliable Grid of Tomorrow by 2027 Develop and Deploy a Small Modular Reactor through Federal Partnership Pave the Way for More Than 200,000 Electric Vehicles on Valley Roads by 2028

Examples of FY 2021 Progress
<ul style="list-style-type: none"> Residential rates lower than 80% of top 100 U.S. utilities; industrial rates lower than more than 95% of top 100 U.S. utilities Provided 56% carbon-free energy supply, including 41% from clean nuclear generation Operating and contracted solar capacity grew 77% First utility-scale solar project through Green Invest brought online and first LPC solar project through Generation Flexibility broke ground First TVA-built utility-scale solar and battery projects underway and expected to be online by 2024-2025 Projects in flight to replace aging, inefficient combustion turbine units with modern, efficient gas capacity to help integrate solar additions More than 750 families served through Home Uplift energy efficiency improvements; program expanded to include rental homes 54 public schools participated in the School Uplift program with nearly 13% average savings on their annual energy bills 34 small businesses benefited from free energy upgrades to lower their energy bills through the Community Centered Growth pilot program Launched the Green Connect program to create a qualified solar contractor network for residential customers: 19 qualified installers, +1,000 customers registered, ~200 installations submitted, 65 installations verified, and over \$7.5 million of customer spending on systems
<ul style="list-style-type: none"> Industry top decile performance in recordable incident rate and top quartile performance in serious injury rate Partnered to bring 80,900 jobs and \$8.8 billion in capital investments to the Valley Contributed more than \$1 million in STEM grants and other education programs for schools across the region, many of which are in underserved communities Approximately 60% of workforce represented by 17 total labor unions Named Top 5 in Tennessee, Forbes Best Employers by State 2021 #2 in Utility, Forbes 2021 America's Best Large Employer
<ul style="list-style-type: none"> Contracted for 196 megawatts of solar battery storage in conjunction with Green Invest solar projects, bringing total contracted battery storage to 246 megawatts Launched the Fast Charge Network program with LPCs, TDEC and other state partners that will add about 80 fast-charging locations to major travel corridors across the Tennessee Valley Partnerships underway with DOE, EPRI, National Labs and others on initiatives to drive better understanding and advancement of carbon capture, alternative fuels and advanced storage technologies Founding member of the Electric Highway Coalition, partnering to develop a fast-charge network connecting 16 states Through 2025, investing over \$2 billion in transmission system improvements: New System Operations Center and Energy Management System construction is scheduled for completion in 2023, with operational acceptance testing in 2024 Began collaboration with Kairos Power to provide engineering, operations and licensing support to help Kairos Power deploy its low-power demonstration advanced nuclear reactor, named Hermes. Programmatic Environmental Impact Statement in progress for an Advanced Nuclear Technology Park at the Clinch River site

UN SD Goals	TVA Priorities / Material Topic	Aspirational Goals
	<ul style="list-style-type: none"> Environmental Justice Supplier Partners Diversity and Inclusion Board and Executive Diversity 	<ul style="list-style-type: none"> Accelerate Impact of Inclusion with Diversity Within TVA and the Communities We Serve Prioritize Social and Environmental Justice for Impacted Communities Enhance Supplier Diversity Program Support for Women-Owned, Minority-Owned and Veteran-Owned Businesses Maintain “Top 10” Ranking for Military-Friendly® Supplier Diversity Program
	<ul style="list-style-type: none"> Community Vitality and Engagement Local Power Company Partnerships Reliability & Resiliency Cultural Resource Management 	<ul style="list-style-type: none"> Strengthen Partnerships and Volunteer in Valley Communities as Part of Our Mission Strengthen Partnerships with Local Power Companies and Direct-Served Customers Maintain 99.999% Reliability while Innovating for a Changing Utility Sector
	<ul style="list-style-type: none"> Climate Change and Resilience Flood and Drought Management 	<ul style="list-style-type: none"> Enhance Climate Adaptation Planning to Improve Overall Resiliency for the Valley Reduce Carbon Emissions 70% by 2030, with path to ~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"> Reservoir and Stewardship Benefits Air Quality Water Quality and Availability Waste Management Habitat and Biodiversity Protection 	<ul style="list-style-type: none"> Improve Integrated Environmental Footprint (Air, Water, Waste, Land, Biodiversity) Protect the Tennessee River System’s Natural Habitats and Biodiversity Support \$12 Billion in Sustainable Recreational Activities on Public Lands and Waters Collaborate with Communities and Conservation Partners to Plant 1 Million Trees

Examples of FY 2021 Progress
<ul style="list-style-type: none"> Launched Internal Environmental Justice core team Established the Enterprise Inclusion with Diversity Council, Supplier Diversity Council and Supplier Mentoring Program \$856 million small-business spend, \$365 million diverse-business spend, and \$1.8 billion Valley-business spend Continued Generating Justice program, partnering with legal aid organizations and law firms to provide pro bono legal services to lower-income residents Supplier Diversity Program named among Top 10 Military Friendly® programs nationwide
<ul style="list-style-type: none"> Supported community recovery, including \$9 million in matching funds for pandemic relief through Community Care donations since 2020 Committed to helping restore communities devastated by natural disasters by providing immediate and long-term support Launched Valley Vision 2035 initiative in CY 2021, collaborating with Valley stakeholders to navigate market transformation and innovation Launched Connected Communities initiative Maintained 99.999% reliability for 22nd consecutive year Reached a Partnership Agreement adoption rate of 95% Invested in nine dam safety projects to ensure continued safe and efficient operations
<ul style="list-style-type: none"> Released the Carbon Report, outlining commitment and path to reduce carbon emissions without compromising reliability and affordability Released Climate Action Adaptation and Resiliency Plan Launched community carbon accounting pilot in partnership with ICLEI and 10 LPCs Continued partnership to implement the Sentinel Monitoring and Aquatic Ecology Management programs to improve understanding and drive action to mitigate climactic impacts on aquatic resources Averted \$170 million in flood damage in the Tennessee Valley
<ul style="list-style-type: none"> TVA Board approved Biodiversity Policy in CY 2021 Conducted 241 natural resource stewardship projects and environmental outreach events Maintained native plant communities on 1,500 acres of grassland to support pollinator species Completed study that indicated TVA’s stream access points contribute \$45.4 million in direct and secondary effects, and support 624 part- and full-time jobs Partnered with non-profit and government groups to establish 7,300 linear feet of riparian buffer along streams to stabilize shorelines and improve water quality Continued partnership with the University of Tennessee’s tree improvement program for reforestation in East Tennessee Partnered with environmental organizations and community groups on three projects to plant pollinator gardens in grassland habitat on TVA rights of way

Aspiring to Achieve Net-Zero

In 2021, TVA announced our aspirational goal of achieving net-zero carbon emissions by 2050.

We recognize the challenges that lie ahead, but we are well-positioned to meet them. TVA is an industry leader in developing innovative technologies that will help decarbonize our economy.

As we work with partners on new technologies, we remain committed to our mission of generating reliable, resilient, low-cost, clean energy — something our customers and prospective customers deserve and expect.

We are on a path to ~80% carbon emissions reduction by 2035 through renewable energy expansion, power grid modernization and exploring decarbonization technologies.

To close the last 20% gap to net-zero, TVA is evaluating emerging technologies such as advanced nuclear, long-duration energy storage, advanced hydro generation technologies, carbon-capture technologies and alternative fuels such as hydrogen, with an eye on commercial-scale production at a cost that enables their deployment.

Carbon Reduction Leadership

57%
by end of CY 2021

Our Plan
70%
by 2030

Our Path
~80%
by 2035

Our Aspiration
Net-Zero
by 2050

Reliable, Resilient, Low-Cost, Clean Energy

When our customers flip the switch, they expect the lights to come on – 24 hours a day, 7 days a week, 365 days each year. We deliver time and time again – providing reliable, resilient, low-cost, clean energy that makes life better for the people in our communities.

We have delivered ever-cleaner energy with 99.999% reliability for 22 consecutive years – a true testament to our relentless commitment to operational excellence. Our performance is in the top decile among the nation's largest utilities.

Our effective wholesale rates are the lowest in a decade, and we intend to keep our base rates stable through this decade. Today, about 80% of the nation pays more for energy than customers served by TVA, and our industrial rates are lower than more than 95% of the nation.

Our focus on reliability, resiliency and low costs — along with our commitment to clean energy — powers economic development in the region. How? By attracting new businesses that demand these attributes in their energy. These businesses bring jobs and capital investment to the region.

TVA's generation system performs in all conditions – on the hottest summer days and the coldest winter nights. Our performance is by design. Sustainable design. It comes from thorough planning and preparation. It comes from investing in our power-generation system and our power grid to ensure they are robust, resilient and leading-edge. And it comes from participating in the research and development of the world's most advanced technologies.



Innovation Drives Progress

Achieving net-zero carbon emissions by 2050 will require TVA to add clean energy generation from a variety of carbon-free generation sources, some of which are not yet available on a commercial scale.

The [energy system of the future](#) will support a diverse portfolio of clean energy sources, advanced technologies and broad electrification in the transportation sector and elsewhere. We are investing in the future today as we set our plans and aspirations for the years to come.

Our aspirations also support broader national efforts to decarbonize the economy through technology advancements.

How will we get there?

Innovation, forward-thinking and working side-by-side with partners to collaborate on solutions. Together, we need to understand Valley interests and needs, how we can address environmental and social justice concerns, and how we can contribute to economic development and sustainability targets.

TVA's work with advanced nuclear technology is a prime example of our commitment to partnering with others to develop innovative, cost-effective technologies that could achieve a net-zero carbon energy future. TVA

TVA EMPLOYEE HIGHLIGHT: STEPHEN FATOKUN

Stephen Fatokun is currently an intern working to modernize TVA's electric grid – but he's not just any intern. Fatokun is pursuing a PhD in Energy Science and Engineering and has master's degrees in both electrical engineering and physics from the University of Tennessee and Western Illinois University, respectively.

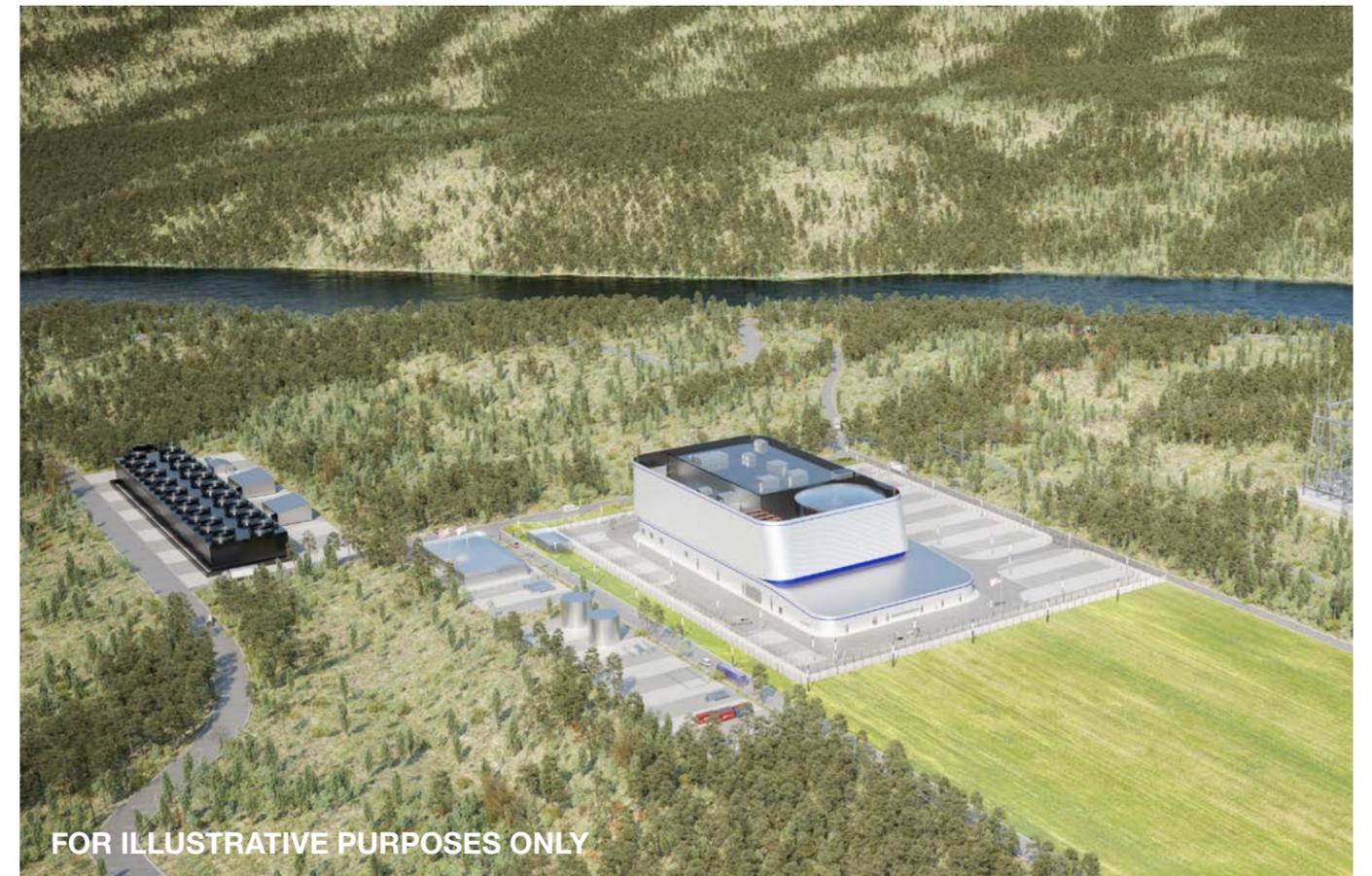
Through his internship, Fatokun supports the Integrated Optimization focus area of TVA's Grid of Tomorrow. "The work I do will greatly drive down the cost of energy generation dispatch, supporting a low-cost and reliable electricity generation," said Fatokun. "This in turn creates sustainability, which drives new people and businesses to the Tennessee Valley. With low cost of power generation also comes a prosperous economy throughout the region."

Originally from Nigeria, Fatokun lives out TVA's mission of service in more ways than one. He also serves in the U.S. Army Reserves.



“ There is no single answer to achieving our nation’s clean energy targets – it will require collaboration and innovation. Working alongside industry partners will allow TVA to go further, faster in developing innovative, cost-effective technologies that will not only help the people of the Tennessee Valley, but also support the energy security of the nation. ”

– Jeff Lyash, TVA President and Chief Executive Officer



FOR ILLUSTRATIVE PURPOSES ONLY

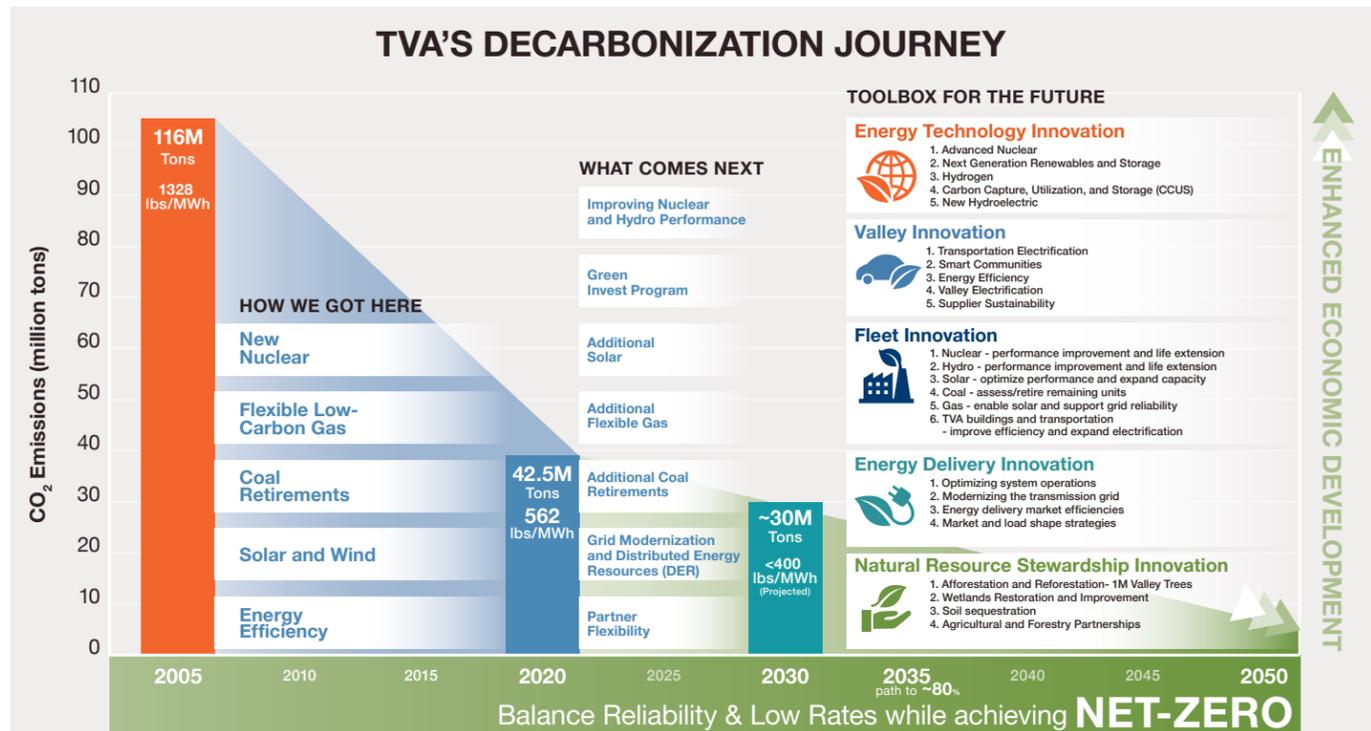
TVA is exploring advanced nuclear technology options for a small modular reactor at the Clinch River Site, as one of several technologies for achieving our long-term decarbonization goals.

has been exploring advanced nuclear technologies for over a decade, and in February 2022, the TVA Board of Directors established TVA's New Nuclear Program when they ratified approval of the programmatic approach to exploring advanced nuclear technology as a component of our decarbonization goals.

Our New Nuclear Program will provide a roadmap for TVA's exploration of advanced nuclear technology, both in terms of various reactor designs and potential locations. TVA also will collaborate with other utilities, government agencies, research institutions and organizations on advanced nuclear technologies.

One of the program's first tasks is pursuing a project to develop a Nuclear Regulatory Commission (NRC) construction permit application and potentially deploy a small modular reactor (SMR) at the Clinch River Site in Oak Ridge, Tennessee. TVA holds the nation's only NRC early site permit specifically for SMRs to date. TVA is currently in discussions with GE Hitachi to support its BWRX-300 light-water SMR design, which will help inform a future decision about potential deployment.

TVA has the industry expertise to lead this effort. Clean, reliable advanced nuclear technologies are an essential part of our region's and nation's clean energy future.



*The graphic above was published in 2021 in TVA's Carbon Report and reflects CY 2020 data. For CY 2021, mass carbon emitted was 50.3 million tons and carbon emissions intensity was 638 lbs/MWh.

Our Decarbonization Journey

Our diverse and increasingly clean generation portfolio includes hydroelectric power, renewable energy, natural gas and the nation's third-largest nuclear fleet.

In CY 2005, we generated 35% of our electricity from carbon-free sources. In 2021, this number rose to 56%. As a result, our mass carbon emitted from electric generation has declined by 57% — one of the largest reductions in the region.

We are actively executing on our plan to reduce carbon emissions by 70% by 2030 and accelerating our path to achieving ~80% reduction by 2035. This includes

continued evaluations to retire existing coal units and incorporating new generating assets such as flexible, efficient gas units, which will enable TVA to expand renewable energy sources in the coming decades while keeping the energy supply reliable.

We have identified more than 30 actions that could lead to deeper carbon reductions, and they are focused in five key areas — Energy Technology Innovation, Fleet Innovation, Valley Innovation, Energy Delivery Innovation and Natural Resource Stewardship Innovation. On the next page are examples of one project for each area.

ENERGY TECHNOLOGY INNOVATION

The Vonore Battery Energy Storage System is TVA's first owned and operated, grid-scale battery storage project. Vonore will use lithium-ion batteries to store 40 megawatt-hours of energy — enough electricity to power more than 11,000 homes for three hours. This project will help guide TVA's future battery projects and long-term asset planning.

FLEET INNOVATION

TVA has made investments to modernize some of our hydroelectric facilities, and ongoing investments to extend the life of these assets and improve performance over time will provide carbon-free generation to the system. In FY 2021, TVA completed significant investment in our nuclear fleet, including replacing all major components on all three Unit 2 turbines at Browns Ferry, increasing efficiency and reliability, and extending their lives for decades.

VALLEY INNOVATION

Our Connected Communities initiative is closing the technology, economic, energy and environmental equity gaps for the communities and people TVA serves. We are funding \$3 million in technology pilot projects to address select challenges, including broadband access, environmental risk monitoring, digital literacy training and next-generation career options. We are partnering with local communities to expand access to technology and ensure our communities are prepared for the energy system and grid of the future.

ENERGY DELIVERY INNOVATION

The heart of our energy system of the future will be TVA's new System Operations Center, a \$289 million investment employing smart technologies to manage energy grid operations more reliably, efficiently and securely. We are working to find ways to ensure our grid and local power company grids work seamlessly as local power companies bring their own solar and other renewable resources onto the system.

NATURAL RESOURCE STEWARDSHIP INNOVATION

TVA is planting trees and establishing working forests that sequester carbon and support biodiversity and air and water quality. Trees and other vegetation remove carbon dioxide from the atmosphere, sequestering nearly a third of global emissions.



While we are on a path to achieving our interim goals toward net-zero, the path is not linear. There will be fluctuations in our carbon emission numbers. Changes in the asset mix have the greatest influence, but annual performance is also impacted by weather, the regional economy, generating unit performance and many other factors. Between CY 2020 and CY 2021, TVA's greenhouse gas (GHG) emissions reflect higher electricity usage in the Tennessee Valley as the region recovered from the effects of the COVID-19 pandemic and experienced economic growth. Changes in the power supply mix between CY 2020 and CY 2021 also impacted the emissions fluctuation, as TVA continues to make operational decisions to keep the system reliable and deliver low-cost energy.

Comprehensive information on TVA's decarbonization journey is available in our [Carbon Report](#) and our [Strategic Intent and Guiding Principles](#) document, both published in May 2021.

Path Forward in Carbon Reduction

This table with its first four columns was originally published in TVA's 2021 Carbon Report. The final column, which is new, shows our 2021 Progress in these areas.

	2020 Accomplishments	Five-Year Actions — Set in 2020	Long-term Actions — Set in 2020	Progress Since 2020
ENERGY TECHNOLOGY INNOVATION <i>New technologies for a net-zero future</i> <ul style="list-style-type: none"> ■ Advanced Nuclear ■ Next Generation Storage ■ Hydrogen ■ Carbon Capture, Utilization and Storage (CCUS) ■ New Hydroelectric such as pumped storage 	<ul style="list-style-type: none"> ▪ Early site permit for Small Modular Reactor (SMR) at Clinch River site ▪ Founding member of the Electric Power Research Institute Low-Carbon Resources Initiative ▪ Contracted for 1,178 megawatts of utility-scale solar generation to the region by the end of FY20 ▪ Early analysis of pump-back options at hydro facilities 	<ul style="list-style-type: none"> ▪ Lead the identification of technologies that advance net-zero electricity ▪ Identify technology and partnership for Clinch River SMR ▪ Battery-storage demonstration project at Vonore, Tennessee, that is expected to be online in 2023 ▪ Long-duration storage pilot project 	<ul style="list-style-type: none"> ▪ Clinch River SMR developed through partnerships; other advanced nuclear exploration ▪ Additional large-scale batteries or storage projects online ▪ Test or demonstrations of carbon capture, renewable natural gas or hydrogen with subsequent development ▪ Pumped storage/new technology hydro addition 	<ul style="list-style-type: none"> ▪ Established a New Nuclear Program that will pursue development of an NRC construction permit application for a small modular reactor at the Clinch River Site (2022). ▪ Began collaboration with Kairos Power to provide engineering, operations and licensing support to help Kairos Power deploy its low-power demonstration reactor, named Hermes. ▪ Electric Power Research Institute Low-Carbon Resources Initiative – 20-plus government funded projects initiated; 50-plus technical reports published; low carbon hydrogen accelerator launched ▪ TVA's battery storage demonstration project at Vonore, Tennessee, is on track to be online in 2023. Environmental Assessment Completed (2022). ▪ TVA has also secured 246 megawatts of battery storage in conjunction with Green Invest solar projects ▪ Established a new research partnership with U.S. Department of Energy's Oak Ridge National Laboratory to advance decarbonization technologies from discovery through deployment (2022)
VALLEY INNOVATION <i>Being a catalyst for economy-wide carbon reduction</i> <ul style="list-style-type: none"> ■ Transportation Electrification ■ Smart Communities ■ Energy Efficiency ■ Valley Electrification ■ Supplier Sustainability 	<ul style="list-style-type: none"> ▪ Electric rates that are priced below 70% of America's other Top 100 utilities ▪ Developed electric vehicle road map with partners ▪ New power rates to help to support development of electric vehicles ▪ TVA Green Programs offer customers renewable energy options ▪ Working with LPCs on programs that help customers manage their energy usage and bills through efficiency ▪ Efficient electrification to support lower Valley carbon footprint 	<ul style="list-style-type: none"> ▪ TVA's Fast Charge Network for electric vehicles ▪ Support Tennessee Valley in emerging as one of the top regions in America for manufacturing electric vehicles ▪ Enable local power companies to generate up to 5% of their energy load through renewable and other sources ▪ Continued energy efficiency to support low-income homes and efficient electrification in the Valley ▪ Work with Valley suppliers to understand carbon levers in supply chain 	<ul style="list-style-type: none"> ▪ More than 200,000 electric vehicles in the Tennessee Valley by 2028 ▪ Mass transit support ▪ Demonstration projects to aggregate electric vehicles and chargers into resource pool ▪ Additional demand response ▪ Evaluate use of coal combustion residuals materials to de-carbonize concrete production ▪ Incorporate environmentally friendly policies and metrics into existing sourcing and procurement practices 	<ul style="list-style-type: none"> ▪ TVA is a founding member of the Electric Highway Coalition, partnering to build fast-charger network to connect major highways ▪ 36 local power companies have implemented or requested the supportive electric vehicle rate ▪ Successfully recruited Ford Motor Company to locate an electric vehicle and battery manufacturing plant in West Tennessee at a site certified through TVA in Haywood County, Tennessee. This is a \$5.6 billion investment — the largest in the state's history — and will create nearly 6,000 jobs in the area. ▪ EVs in the Tennessee Valley cut gasoline emissions by using one of the nation's lowest-carbon power systems; each EV reduces 8,600 lbs of CO₂ emissions per year ▪ Collaboratively developed a toolkit of Connected Communities Resources (Roadmap, Guidebook, Database, Implementation Guides) for Valley communities to help them leverage information and technology to meet community needs. Pilot projects under development. ▪ 750 families served through Home Uplift energy efficiency improvements in 2021. ▪ Implemented the Green Connect program in FY21 creating a qualified solar contract network. Currently, 19 qualified installers, +1,000 customers registered, ~200 installations submitted, 65 installations verified, and over \$7.5M of customer spending on systems within the Green Connect network.

	2020 Accomplishments	Five-Year Actions — Set in 2020
FLEET INNOVATION <i>Creating more carbon reductions with our existing fleet</i> <ul style="list-style-type: none"> ■ Improving nuclear performance ■ Nuclear License Extension ■ Improving and extending hydro performance ■ Addition of current solar technology (and more as storage technology advances) ■ Evaluate retirement of additional coal ■ Flexible low-carbon gas capacity ■ TVA Building/Fleet Performance 	<ul style="list-style-type: none"> ■ Diverse generation mix that provides reliable and affordable energy and positions TVA well for future ■ Maintaining our carbon-free nuclear plants and improving outage performance ■ Continue to invest in new solar through nationally recognized renewables program ■ TVA has an Internal Energy Management Program and has completed energy efficiency improvements saving enough energy to power 50,000 average homes for a year ■ Retired or announced the retirement of nearly 60% of our coal units 	<ul style="list-style-type: none"> ■ Additional renewable energy ■ Continue to develop and match large-scale solar, with storage options, to large business and industrial customers through our award-winning Green Invest program ■ Increase investment in existing hydro assets to optimize performance and extend life ■ New flexible gas brought online to support renewables ■ Climate change considerations embedded into established business practices ■ Investing in the current nuclear fleet to improve nuclear performance ■ Increase TVA fleet procurement of electric vehicles
ENERGY DELIVERY INNOVATION <i>Reducing carbon emissions by finding innovative ways to deliver power</i> <ul style="list-style-type: none"> ■ Optimizing system operations ■ Modernizing the transmission grid ■ Energy Delivery Market Efficiencies to optimize renewables ■ Southeast Energy Exchange Market ■ Market and Load shape strategies 	<ul style="list-style-type: none"> ■ 99.999% reliable power today ■ Support the development of a regional energy exchange market ■ Technology enabled right of way management 	<ul style="list-style-type: none"> ■ Complete construction of new System Operations Center ■ Market enabled centralized dispatch for Distributed Energy Resources (DER) Integrated system and distribution planning ■ Enhanced dispatch engine capable of co-optimizing reliability, least cost and environmental impacts ■ Participation in the Southeast Energy Exchange Market
NATURAL RESOURCE STEWARDSHIP INNOVATION <i>Assess the potential for carbon reduction and sequestration and for applying greenhouse gas protocols</i> <ul style="list-style-type: none"> ■ Reforestation and afforestation (1 million trees) ■ Wetlands Restoration ■ Soil Sequestration ■ Agriculture and Forestry Partnerships 	<ul style="list-style-type: none"> ■ Protects vegetation and wetlands on public lands today ■ Public lands and waters provide significant economic value today ■ “Shade Your Stream” program for water quality 	<ul style="list-style-type: none"> ■ Develop 1 Million Trees Program ■ Conduct climate change adaptation research ■ Establish partnerships with agricultural community

Long-term Actions — Set in 2020	Progress Since 2020
<ul style="list-style-type: none"> ■ Additional renewable energy with storage ■ Ongoing nuclear performance improvements involving outage execution, capital projects and staffing alignment to support regulatory requests for 80-100 year nuclear unit operations. ■ Evaluating the impact of retiring the balance of the coal fleet by 2035 ■ New flexible gas brought online to support renewables; demonstrate carbon capture ■ TVA corporate fleet shifted to electric vehicles where feasible ■ Condition based maintenance ■ Increase investment in existing hydro assets to optimize performance and extend life 	<ul style="list-style-type: none"> ■ Began environmental reviews to evaluate retirement / replacement of Kingston and Cumberland Coal Plants. ■ Operating and contracted solar capacity grew 77% over past year; 2,821 megawatts in Valley solar when announced projects come online by 2024. ■ Completed significant investment in our nuclear fleet in fiscal year 2021, including replacing all major components on all three Unit 2 turbines at Browns Ferry, increasing efficiency and reliability, and extending their lives for decades. ■ TVA Vehicle Fleet: Implementing a plan to achieve announced TVA Vehicle Fleet goal to be 100% electric light duty by 2030. TVA Announces Fleet EV Plan ■ Developed Climate Action Adaptation and Resiliency Plan ■ TVA nuclear fleet achieved industry Top Quartile performance
<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 resources ■ Fully integrated planning which resolves load shape locally and offsets the need for system scale peaking resources ■ Operational infrastructure in place to fully support this integrated planning model 	<ul style="list-style-type: none"> ■ Maintained 99.999% reliability for 22nd consecutive year ■ System Operations Center (SOC): building and transmission line construction underway. The SOC will house TVA's new energy management system. This system works with smart technologies to help lower costs and increase reliability. Expected to be fully operational in 2025. ■ Continued participation to develop the Southeast Energy Exchange Market to deliver low-cost, reliable and cleaner energy ■ Published Broadband Implementation Guide
<ul style="list-style-type: none"> ■ Be a leader in nature-based climate solutions to mitigate climate change and build resilience ■ 500,000 trees planted and 15 acres of wetlands restored/improved by 2035; 1 million trees by 2050 ■ Carbon sink and flooding protection (adaptation) projects 	<ul style="list-style-type: none"> ■ Established 1 Million Trees Program for afforestation in the Tennessee Valley ■ Invested \$300,000 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 ■ Developed TVA Biodiversity Policy and received TVA Board approval in CY 2021. ■ Developed Climate Action Adaptation and Resiliency Plan



Renewable Energy

TVA has been committed to renewable energy since we started building our first dam in 1933, and we have continued to evolve our investment in renewable generation since that time. Today, TVA has over 8,200 megawatts of renewable energy, including solar capacity totaling over 2,800 MW when all committed solar projects come online, pending environmental review, working toward a goal of 10,000 MW of solar by 2035.

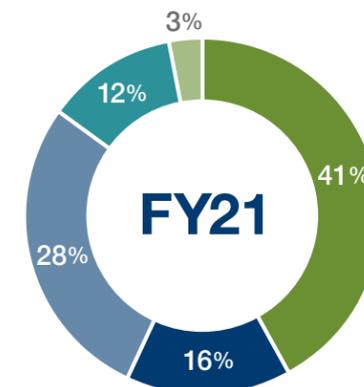
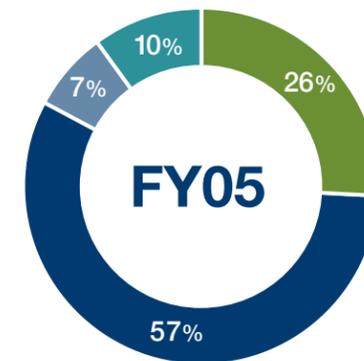
Solar will play a key role in TVA's energy system of the future. TVA has contracted for almost 250 megawatts of battery storage in conjunction with these solar projects. We grew our operating solar and committed solar by 77% over the past year. These additions will primarily meet customer needs for renewable energy, helping to reduce overall Valley carbon while driving jobs and investments to the region.

TVA offers TVA Green programs in partnership with local power companies to meet the sustainability goals of business and residential consumers. TVA Green programs

were developed to increase the availability and reduce the cost of renewable energy in the Valley. These programs help strengthen the region's competitiveness for jobs and investments and create a sustainable commitment to making the Valley a great place to live and do business.

TVA ranked in Energy Intelligence's Top 100 Green Utilities in 2021 based on carbon emissions and renewable energy.

Energy Portfolio



■ Nuclear ■ Hydro ■ Wind & Solar ■ Coal ■ Gas

*Chart depicts both generated and purchased power within respective resource types. In addition to power supply sources included here, TVA offers energy efficiency programs that effectively reduced FY 2021 energy needs by about 2,300 GWh or 1.4%. TVA sells the renewable energy certificates resulting from some of its purchased power to certain customers.

GENERATION FLEXIBILITY

Generation Flexibility is an option offered to long-term local power company partners that enables them to generate a portion of their own energy to meet the renewable energy goals of their customers, attract sustainability focused businesses to their communities and solve challenges for their customers or distribution systems.

TVA / GREEN

GREEN CONNECT

Green Connect provides resources to help residential consumers when installing a home solar system and connects them to quality installers. With installation verification, consumers can be sure their solar system is installed to TVA's Green Connect program standards.

GREEN FLEX

Green Flex enables businesses with high energy consumption to quickly meet their sustainability goals at a lower cost through bulk purchases of primarily out-of-Valley wind to reduce the impact of electricity consumption, support renewable energy and become a leader in sustainability.

GREEN SWITCH

Green Switch provides the easiest solution for customers to power their homes or businesses through 100% renewable energy. For as low as \$2 per month, customers can match some or all their current electricity use with a mix of solar, wind and biomass generation sources located in the Valley. In FY 2021, the mix was approximately 70% solar, 20% wind and 10% biomass sources.

GREEN INVEST

Green Invest is a proven, award-winning model that offers an effective, timely and cost-competitive solution to meet the sustainability goals of business, industrial and organizational customers to drive jobs and investments to the region. The program matches customer demand for renewable energy with new utility-scale solar facilities in the Valley and enables the growth of affordable solar without shifting costs to non-participants. Through Green Invest, TVA has committed to nearly \$3 billion in solar investments to bring more than 2,000 megawatts of new utility-scale solar to the Valley since 2018. Thanks to economic development partnerships with Google, Meta and others seeking electric energy from renewables, more large-scale solar generation being sited and harnessed in the Tennessee Valley is driving prosperity and reducing carbon emissions.

Electric Vehicles

Electrification is a shared priority across many sectors and industries – and TVA, along with our local power company partners, is well-positioned to lead this transformation. Our public power model and seven-state reach enable us to bring together the right partners to accelerate the adoption of electric vehicles (EVs) by reducing and removing the primary barriers that prevent consumers from making the switch to EVs.

TVA is partnering with local power companies, state agencies, automakers and others to pave the way for well over 200,000 EVs on Tennessee Valley roads by 2028. The benefits for the region are significant: attracting next-generation manufacturing jobs, reducing carbon emissions by almost 1 million metric tons per year, reinvesting \$120 million in the local economy each year from electric refueling, and saving drivers \$200 million in petroleum-based fuel and maintenance costs every year.

We are making investments and coordinating partnerships to help fund up to \$40 million in programs to support EV adoption over the next five years.

Consumers say “range anxiety” experienced when there is limited public charging availability is one of their top barriers to purchasing an EV. To address this concern, TVA is working with state agencies, local power companies and third-party charging developers to

create the Fast Charge Network, a network of public fast-charging sites located at least every 50 miles along interstates and major highways across our seven-state service area. This ambitious EV fast-charging program, with its focus on both urban and rural communities, is one of the most comprehensive in the nation. The Fast Charge Network will add approximately 80 new locations and 200 fast chargers to existing charging infrastructure by 2026 to provide EV drivers with added confidence to travel long distances throughout the region.

Additionally, TVA offers an industry-leading EV rate option to local power companies to encourage rapid public and private investment in EV infrastructure.

We’re also setting the tone for EV adoption by electrifying our own fleet of utility vehicles. TVA’s internal fleet electrification program is among the most aggressive in the electric utility industry, with plans to transition 100% of light-duty vehicles and 50% of medium-duty vehicles to EVs by 2030. We’re also expanding EV infrastructure and programs in our workplaces so more employees will be able to take advantage of this no-carbon option for travel.

With our partners in place and rapidly growing EV infrastructure, TVA is making it easier than ever for consumers to make the switch to EVs.

Paving the way for
200,000
Electric Vehicles
in the Valley
 Estimated by 2028



Economic Impact: Partnering to Build the Region's Clean Energy Economy

TVA helps power economic success by providing low-cost, highly reliable, increasingly clean energy that attracts innovative industries, jobs and investments to our seven-state region. Our work with local power companies and other partners has attracted about 350,000 jobs to the region and delivered more than \$45.9 billion in capital investments over the past five years.

From flood management that has averted more than \$9.7 billion in flood damage in our recorded history to a vibrant Supplier Diversity Program that supports small, local and diverse companies, we are fulfilling our mission to promote economic prosperity across the Tennessee Valley and beyond.



Economic Impact Snapshot

Metric	FY 2019	FY 2020	FY 2021	FY 2021 Highlights
Power from carbon-free sources delivered (%)	54%	57%	56%	In calendar year (CY) 2005, we generated 35% of our electricity from carbon-free sources. We generated 56% of our electricity from carbon-free sources in 2021. Our diverse and increasingly clean generation portfolio includes hydroelectric power, renewable energy and the nation's third-largest nuclear fleet.
CO ₂ emissions rate (lbs/MWh)	741.66	561.92	637.67	Our mass carbon emitted from electric generation has declined by 57% since 2005 — one of the largest reductions in the region. Between calendar years (CY) 2020 and 2021, our CY carbon emissions reflect higher electricity usage in the Valley as the region rebounded from COVID-19 effects. We have a plan to reduce carbon emissions 70% by 2030 as we work toward our aspirational goal of net-zero by 2050. Comprehensive information on our decarbonization path is available in the Carbon Report.
Non-fuel delivered cost of power rate (cents/kWh)	3.46	3.20	3.22	Residential rates in 2021 were lower than 80 percent of the large U.S. utilities, and our industrial rates were lower than more than 95 percent of the top 100 U.S. utilities.
Retail rate average (cents/kWh)	9.33	9.14	9.18	
Transmission system reliability rating	99.999 %	99.999 %	99.999 %	TVA assesses and improves transmission assets regularly to maintain reliability and resiliency. 2021 was our 22 nd consecutive year of 99.999% reliability.
Number of jobs created or retained (#)	66,500	67,000	80,900	TVA's clean energy strategy has attracted global tech companies such as Amazon, Meta and Google, and the Tennessee Valley is becoming the Southeast leader in electric vehicle production.
Avoided flood damage (\$M)	\$1,600	\$1,000	\$170	TVA is conducting reviews and analyses to determine how to be even better prepared for extreme flood events.
Total diverse business spend (\$M)	\$395	\$388.5	\$365	This year, TVA continued to strengthen our focus on local and diverse suppliers through the establishment of a Supplier Diversity Stakeholder Advisory Council and a Supplier Mentoring Program. TVA's Supplier Diversity Program was named among the Top 10 Military Friendly® programs nationwide.
Total small business spend (\$M)	\$766	\$844	\$856	
Total Valley business spend (\$B)	\$2.0	\$1.8	\$1.8	

Attracting Jobs and Capital Investment

The vitality and growth of our seven-state region is underpinned by the energy we, along with local power companies, provide to communities. The benefit of local power companies and TVA working together is that as we generate community energy, we are building a better tomorrow. At TVA, we are here to serve the people, not shareholders.

Over the past five years, our work with local power companies and other partners has attracted about 350,000 jobs to the region and delivered more than \$45.9 billion in capital investments. Despite the impacts of COVID-19, TVA helped attract or retain 80,900 jobs and \$8.8 billion in capital investments in 2021 alone.

We are partnering with the automotive industry, state partners, local power companies and direct-served customers to drive electric vehicle growth in the region. In September 2021, Ford Motor Company and SK Innovation announced plans to locate their new electric vehicle and battery plant in Stanton, Tennessee. The facility will create nearly 6,000 new jobs and generate \$5.6 billion in investments to build the F-150 Lightning™ electric truck.

With General Motors, Nissan, Volkswagen and automotive industry suppliers with EV operations in the region, the Tennessee Valley is becoming the Southeastern leader in electric vehicle production. Collectively, over the past 10 years, electric vehicle and battery manufacturing accounts for \$13.8 billion in investment and more than 10,500 new jobs in the region.

Our clean energy strategy has also attracted global tech companies such as Amazon, Meta and Google that have built major operations across our seven-state region. Our support of their ambitious environmental goals was a critical factor in the decision to expand operations to this area.



APPROXIMATELY

80,900 Jobs
Over \$8.8 Billion
Capital Investment

across our seven-state territory through economic development in FY 2021 alone

TVA EMPLOYEE HIGHLIGHT: HEIDI SMITH

As TVA's Director of Global Business, Heidi Smith is responsible for bringing big things to the Valley. It's up to Smith and her team to foster job creation and economic development in the region through business recruitment, training and development, marketing and more. According to Smith, the team takes a balanced approach to support growth – and that includes an eye toward sustainability.



“Sustainability to me means meeting the needs of the Valley without compromising the needs for future generations,” she says. “Clean energy has become a key driver in company location decisions, and renewable energy provided by TVA helps attract those companies here to the Valley.”

Not only does providing reliable, low-cost, clean energy attract companies, but it also helps existing industries grow, creating and retaining job opportunities and investment in the region. Smith's work is fundamental to TVA's mission of service, and it's carried out through partnerships with state, regional and local economic developers, plus local power companies.

“Economic Development for me is not just a profession, but a passion. It is so rewarding to watch a community, region or state create jobs and opportunities for its citizens and to be a part of impactful, sustainable growth for the communities we serve.”

For 16 consecutive years, Site Selection magazine has selected TVA as one of the nation's top economic development organizations.





Protecting Lives and Property Through Flood Management

The Tennessee Valley has been pummeled with record rainfall in recent years. In calendar year 2021, the Valley experienced 60.91 inches of rain, which is 120% higher than normal, and in 2020, the Valley received 70.3 inches of rainfall. Prior to 2017, a normal year averaged out at 51 inches of rain.

While our hydro facilities and dams generate energy, they also serve another purpose. TVA uses 49 dams to manage reservoir levels and river flows, and these flood management efforts save lives and protect homes, businesses and public properties. Over our recorded history, TVA has averted more than \$9.7 billion in flood damage in the Tennessee Valley and along the Ohio and Mississippi rivers. In 2021, that figure was \$170 million.

After an extreme flood event in August 2021 near Waverly, Tennessee, TVA immediately responded to the emergency, sending line crews to the impacted areas to assist with debris removal and partnering with local power company Meriwether Lewis Electric Cooperative to address other immediate needs. We made TVA equipment and emergency meals available, delivered more than 30,000 bottles of water to Waverly, and supplied local shelters with relief items for those impacted.

**TVA Dams Save Lives,
Avert Over \$9.7 Billion in
Estimated Flood Damages**

Investor Relations

TVA is pursuing sustainable financing options to support our clean, green future. In 2021, TVA announced our first green bond offering, which will help fund our energy transition. The \$500 million offering of 10-year maturity green bonds drew strong market demand with over \$2 billion in initial orders, closing with a 1.500% interest rate – a TVA record for the lowest 10-year interest rate. The bonds locked in potential savings of more than \$15 million in interest expense over the term of the bond, including an estimated \$1 million of savings because of demand for the green bond format.

Based on TVA's Sustainable Financing Framework, proceeds from the bond sale may be used for renewable energy projects, battery storage, development of advanced clean energy technologies and transmission system enhancements – all of which support our 2050 net-zero carbon aspirational goal.

Low-cost financing will enable us to keep energy rates as low as possible while we make strategic capital investments in our generation and grid system to prepare for a sustainable future.

The proof is in the numbers – this level of interest in our green bond offering is a clear indication of the financial community's confidence in TVA's sustainability goals and the importance of clean energy investments.



Supplier Diversity

A sustainable future is an equitable future. TVA maintains a competitive supplier base reflective of our region, and we welcome businesses of all types – small, minority-owned, woman-owned, veteran-owned, service-disabled veteran-owned and those located in historically underutilized business areas.

Our Supplier Diversity Program helps fulfill TVA's mission of making lives better by supporting small, local and diverse companies. We seek to provide inclusion opportunities for small and diverse businesses to help them grow and generate economic prosperity in the communities we serve. In 2021, TVA spent \$856 million with small businesses and \$365 million with diverse businesses.

Last year, we established a Supplier Diversity Stakeholder Advisory Council, which is comprised of executives from across TVA. The council is responsible for developing and enforcing policies and practices to strengthen supplier diversity strategies. Members serve as liaisons between TVA and external stakeholders, businesses and partner organizations. We also developed a Supplier Mentoring Program intended to develop specific skills that will prepare suppliers to participate in TVA's contracting and procurement processes and to gain experience with TVA.

TVA tracks Supplier Diversity performance using key indicators that detail total small business spending, total diverse business spending and total Valley business spending, all measured in dollar amount and percent of total spending.

**TVA's Supplier Diversity
Program is among the
Top 10 Military Friendly®
programs nationwide.**

Environment:

Stewarding the Region's Resources

TVA is unique among power generators in our responsibility to steward the region's resources. We manage and sustain the Tennessee River system and public lands, including about 11,000 miles of shoreline, 650,000 surface acres of reservoir water and 293,000 acres of reservoir lands. We have a duty to manage public land sustainably for present and future generations.

Our environmental stewardship includes aggressive clean air control programs, monitoring water quality and aquatic life throughout the Tennessee River system, and proactively protecting biodiversity. We work closely with more than 20 federally recognized Indian tribes to manage cultural resources on TVA lands.



Environment Snapshot

Metric	FY 2019	FY 2020	FY 2021	FY 2021 Highlights
SO ₂ (metric tons) (CY):	26,972	17,082	25,226	In 2021, we invested \$17 million in air quality controls, contributing to the total \$6.8 billion invested since 1970.
NO _x (metric tons) (CY):	19,430	12,577	15,210	
Freshwater consumption (billions of liters/net MWh)	.0000006	8.00 E-07	8.00 E-07	Releases from TVA dams consider flow requirements for both safe recreation and habitat protection in dam tailwaters, which contributed to the recovery and removal of the snail darter from the federal Endangered Species List in 2021.
Total water withdrawal- non-consumptive (billions of liters/net MWh)	.0001116	8.23 E-05	8.23 E-05	
Total acres of habitat protected, enhanced or restored (#)	247,706	247,104	247,098	TVA adopted a Biodiversity Policy in CY 2021, committing to transparency, partnership and the integration of biodiversity conservation across project planning. More than 181,000 acres of public lands under TVA's management have been set aside for natural resource management with the intention of preserving natural wildlife habitats, protecting endangered plant and animal species and enhancing the biodiversity of the Tennessee Valley region.
Percent of coal combustion products beneficially used	45%	87%	59%	We have fully implemented our program to convert coal combustion residual storage from wet impoundments to dry systems (lined landfills) and maintain a robust groundwater monitoring network of more than 450 wells across CCR sites.
Amount of hazardous waste manifested for disposal (metric tons)	93.67	93.13	50.1	
Compliance: Notice of Violations (#)	4	6	1	TVA is committed to improvement in environmental compliance through employee training and education, continuous improvement and preventive measures.

Climate Change and Resilience

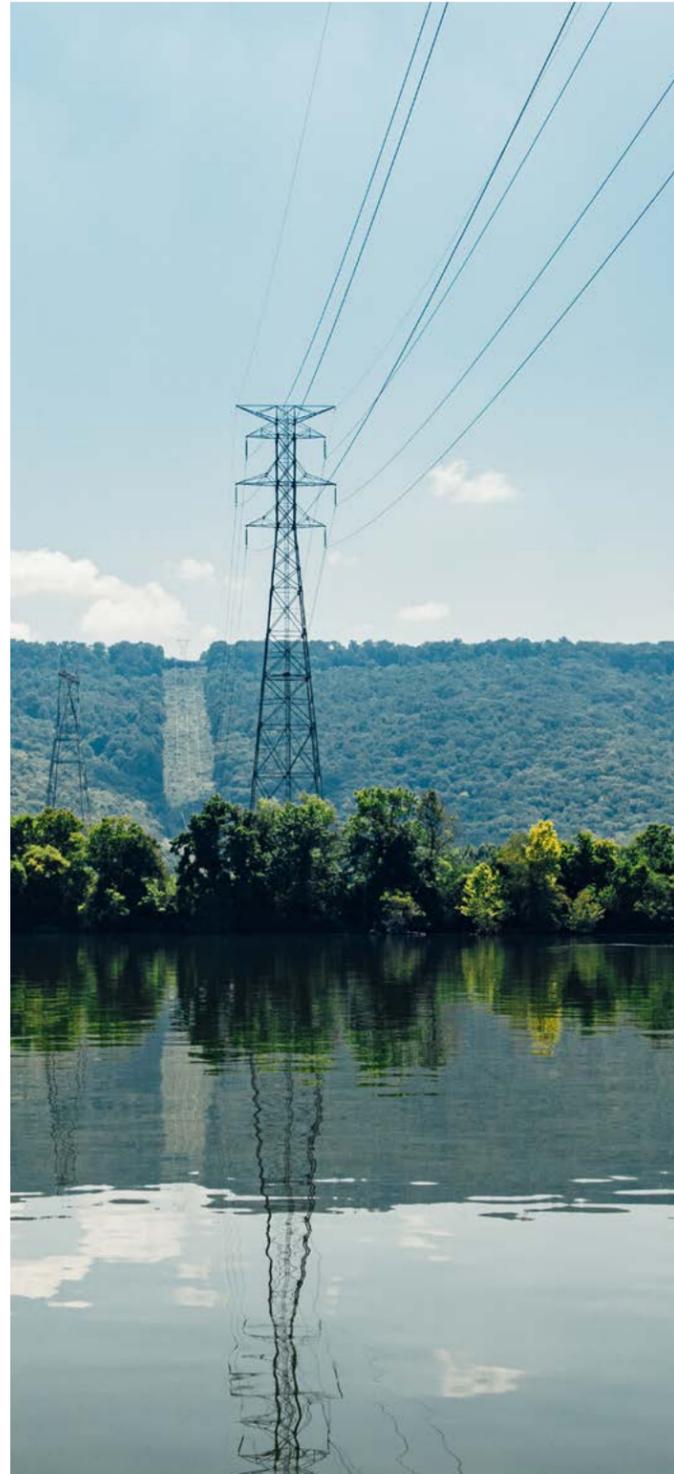
We are innovating and partnering with communities across the region to create a clean energy economy while maintaining high reliability and low rates. We also strive to create a future adaptive and resilient to the impacts of climate change.

While the scope, severity and pace of future climate change impacts are difficult to predict, TVA's climate change adaptation planning allows us to operate in a secure, effective and efficient manner in a changing climate. The [TVA Annual Report on Form 10-K](#) contains carbon reporting and a discussion of potential business risks related to climate change.

We maintain a [Climate Action Adaptation and Resiliency Plan](#), last updated in August 2021. The plan focuses on ensuring constant equipment reliability; monitoring, detecting and responding to physical threats such as extreme weather or cybersecurity threats; and recovering from damage if an event occurs. It describes TVA's activities to evaluate the most significant climate change risks to, and vulnerabilities in, our operations as well as our progress on additional projects to manage climate risks and build resilience for the future.

In 2021, TVA began a collaborative effort with Local Governments for Sustainability (ICLEI) to deliver a series of [Community Greenhouse Gas Inventory](#) education sessions to a volunteer pilot group of local power companies. Participation provides local power companies with the tools and guidance necessary to develop a community inventory geographically based on their service territory. The community inventory baseline will help the participants with carbon emission reduction analysis, which ultimately could improve their resiliency and enhance their service territory's competitiveness when recruiting new business.

We also collaborate with partners on TVA's Sentinel Monitoring program to gain a better understanding of climate impacts on water resources and promote actions to protect aquatic resources in the Tennessee River watershed.



Air Quality

TVA has one of the most aggressive clean air control programs in the country. We invested \$17 million on Clean Air Act projects in 2021. From 1970 to 2021, we spent \$6.8 billion to reduce emissions from our power plants, including \$17 million, \$19 million and \$17 million in 2021, 2020 and 2019, respectively, on clean air controls.

Air quality is a factor in planning TVA's future power generation mix. As TVA replaces coal plants with cleaner sources of power and energy efficiency measures, we reduce emissions of nitrogen oxides, sulfur dioxide, carbon dioxide and other greenhouse gases.

By investing in high technology emissions-cleaning technology, we have reduced sulfur dioxide (SO₂) emissions by 98.8% since 1977. We have reduced nitrogen oxide (NO_x) emissions by 96.9% since 1995.

The gas fleet, particularly Combustion Turbines (CT), plays a critical role in providing the flexibility needed to integrate renewables and distributed resources. As part of our generation planning and the National Environmental Policy Act (NEPA) process, we are evaluating changes at the Johnsonville plant, including replacing existing combustion turbines with more efficient units that could minimize NO_x and CO emissions from the operations. As such, they will improve the system's ability to effectively integrate renewable resources such as solar and wind.



Emissions reduced from historic peaks

96.9%

Reduction in nitrogen oxide (NO_x) below CY 1995 levels through CY 2021 from TVA owned and operated generation

98.8%

Reduction in sulfur dioxide (SO₂) below CY 1977 levels through CY 2021 from TVA owned and operated generation

57%

Reduction in mass carbon emitted between CY 2005 and CY 2021 from TVA owned and operated generation, and purchased power

Water Quality and Availability

At TVA, we monitor water quality and aquatic life throughout the Tennessee River system and share data with communities, industries and organizations. We manage water supply in the system; improve waters around TVA's 49 dams; and collaborate with communities, organizations and agencies to preserve and enhance the aquatic biodiversity in the Tennessee River system.

We monitor dissolved oxygen and water temperature downstream of our dams to determine if the conditions are suitable for aquatic life. On average, we collect about 900 samples downstream of our 29 conventional hydroelectric sites each year. We monitor the rivers above and below these facilities as well. Routine monitoring notifies TVA if conditions change, so we can take action, if needed, to maintain water quality.

At Tims Ford Reservoir on the Elk River in south central Tennessee, we monitor water temperatures and dissolved oxygen downstream of Tims Ford Dam and provide dam releases that promote aquatic life and recreation on the Elk River. We do not generate power at Tims Ford during the warmer months to prevent sudden cold temperatures, which may shock aquatic life, and to provide good habitat for native warm-water species. Recent surveys have shown that aquatic health has greatly improved since TVA adopted this effort. TVA's River Forecast Center decreases dam releases over the weekend, whenever possible, to provide safe flows for local anglers. The operations at Tims Ford were also



influential in the recovery of the snail darter and its subsequent removal from the Endangered Species Act's list of threatened species.

Our hydrothermal team also monitors the water temperature and flow in the river system and provides river forecasting information to guide TVA's integrated operations. This allows TVA to manage the river system proactively and help maintain adequate water supply for agricultural, industrial, municipal and recreational use. Integrated management also provides cooling water to support nuclear production while optimizing hydropower production and reducing carbon emissions.

For more than three decades, TVA's water-resource professionals have managed the health of the Tennessee River through our Reservoir Ecological Health Sampling and Stream Monitoring program. In FY 2021, TVA conducted water sampling at 691 locations across the Valley, and our River Management group pulled 5,377 samples to monitor the health of our reservoirs. We share data and analysis with resource management agencies, regulatory agencies, private organizations and educational institutions. This data influences best management practices for watershed restoration projects, guides decisions within rural and urban development planning regions, inspires education and outreach for communities, and advances scientific knowledge of the diverse fish populations within the Tennessee Valley.

Habitat and Biodiversity Protection

TVA is unique among power generators in our responsibility to manage and sustain the Tennessee River system and public lands, including about 11,000 miles of shoreline, 650,000 surface acres of reservoir water and 293,000 acres of reservoir lands. TVA protects biodiversity by proactively managing public lands and reducing the impact of our operations. The span of TVA operations and public lands, combined with the biodiversity of the region, position us as a regional leader in biodiversity conservation.

Our region supports aquatic biodiversity, including several species of fish and mussels found nowhere else in the world. High levels of biodiversity support the overall health of the region's ecosystems and of our communities. Biodiversity in ecosystems provides essential benefits and services to human society, including a stable food supply, clean water and new medicines, as well as ecological, recreational, cultural and aesthetic value. Many species are indicators of changes in ecosystems that could also impact our health, so it is important to track changes in biodiversity.

In an increasingly developed world, where sustainability is an essential part of continued economic growth, incorporating biodiversity conservation into TVA

TVA EMPLOYEE HIGHLIGHT: KELVIN YOUNG

When Kelvin Young was learning from his dad how to fish as a toddler, it was sparking a lifelong love of the outdoors that would lead to a fulfilling career.

As a TVA watershed representative, Young's daily focus is on keeping our natural resources in top condition for the safety and enjoyment of current and future generations. That includes everything from performing prescribed burns, to assessing and removing dangerous trees, to conducting recreational enhancement projects and annual land condition assessments on the reservoir.



"We're looking closely at the entire ecosystem," says Young. "That's extremely important when it comes to protecting the biodiversity of our lands and water."

TVA's commitment to biodiversity includes maintaining a successful balance between needs of the reservoir and of the many Valley residents who enjoy living and recreating on it.

"It's a partnership," says Young. "At the end of the day, we all want the same thing—for our natural resources to be their very best, and to remain so for our children and grandchildren to enjoy."

As a former forester and wildland firefighter for the United States Forest Service, Young has experienced the beauty of well-managed lands and waterways as well as the devastation of natural disasters.

"Everyone has their niche for a career, and I can't think of a better one than being out here, taking care of our natural resources. As someone who's lived in the Tennessee Valley most of my life, it's a privilege for me to not only work for TVA, but to be caring for the place I call home."

projects is more important now than ever. Approved in November 2021, TVA's Biodiversity Policy publicly commits to integrating biodiversity conservation across our operations, in all aspects and at all levels. Together, we work to improve transparency and build trust with the public and with our partners, and to expand our biodiversity conservation activities. TVA also follows our Natural Resource Plan to guide our efforts to support and enhance biodiversity and habitat in the region.

We work closely with partners across the Valley on numerous biodiversity projects. We are restoring and conserving native fish and mussels and their habitats in the Little Tennessee River by collaborating with the Little Tennessee Native Fish Conservation partnership. The Little Tennessee River watershed spans Georgia, North Carolina and Tennessee, and it features diverse aquatic habitats, including high elevation cold-water trout streams, warm-water rivers and deep reservoirs. We focused on planting trees along the waterways, evaluating river chub spawning nests and prioritizing mussel releases.

Serving as one of the primary partners implementing the Sicklefin Redhorse Candidate Conservation Agreement, TVA is committed to seeking solutions for this threatened fish species, including collecting population age and growth data, propagating and reintroducing them back in streams with suitable habitat. The sicklefin redhorse is a culturally significant species to the Eastern Band of Cherokee Indians. Other participants in the project include the N.C. Wildlife Resources Commission, Georgia Department of Natural Resources and U.S. Fish and Wildlife Service. In 2021, the partners conducted three stream surveys — tagging about 300 fish in the Hiwassee, Valley and Oconaluftee watersheds, and releasing 6,000 fish into the Oconaluftee River on the Eastern Band of Cherokee Indian Reservation. A pilot study was also initiated in 2021 to determine the feasibility of stocking above Nottely Reservoir.

We collaborated with the Natural Resources Conservation Service, Tennessee Environmental Council and local communities on three projects intended to increase

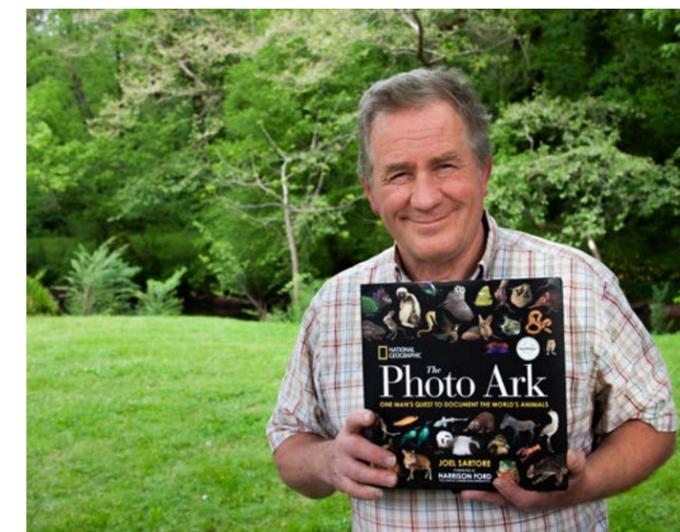


Three Stream Surveys
300 Fish Tagged
 in the Hiwassee, Valley and Oconaluftee watersheds
6,000 Fish Released
 into the Oconaluftee River

biodiversity and conserve fragile ecosystems in TVA power line rights of way (ROW). The projects aim to transform these open grassland ecosystems into pollinator habitats to make the best use of ROW space under transmission lines.

In FY 2021, we incorporated a 10-acre grassland restoration into the TVA System Operations Center in Meigs County, Tennessee. Integrating habitat and species conservation into our operations results in quality habitat for pollinators and other grassland plant and animal species.

Across TVA, our biologists help protect species in our region, and they are highly sought after for their expertise. For example, when photographer Joel Sartore wanted to photograph rare species in the Tennessee Valley, he contacted TVA biologists to help locate and identify populations of mussels and fish, native to the region. Sartore is the founder of The Photo Ark, a National Geographic Society project that aims to photograph about 20,000 species living under human care in locations around the world. The project's goal is to save species through photography by inspiring people to care about the protection of all living creatures.



Protecting Our Pollinators

Bees, butterflies, bats and other pollinator species help produce one in every three bites of food we eat. They also play a vital role in supporting the healthy ecosystems that improve air quality, stabilize soils and support other wildlife. However, some of these vital species are now at risk: habitat loss and other threats have been linked to recent declines in pollinator populations worldwide.

TVA supports pollinators through the restoration, maintenance and enhancement of pollinator habitats on our public lands and rights of way (ROW) corridors, as well as through public outreach and education projects to protect these special species.

Do you want to help support pollinators? In 2021, TVA joined our partners as a sponsor of the Electric Power Research Institute's virtual Pollinator Power Party to teach participants how to support pollinators in their own backyard. Attendants participated in fun-filled, at-home activities, including a cooking class, pollinator art and culture, habitat management stories, gardening tips and more. Read about this and other Pollinator Week activities at pollinator.org.

Cultural Resource Management

Many of TVA's public lands include much more than nature's beauty. They also include a history of those who came before us, including Native American tribes. More than 20 federally recognized Indian tribes (Tribes) have a religious and cultural connection to ancestral homelands in the Tennessee Valley, and they play a vital role in the management of cultural resources on TVA lands.

Seventeen tribal nations attended the TVA 2021 annual meeting, held virtually due to the COVID-19 pandemic. They made presentations to TVA leadership and employees on tribal sovereignty, cultural sensitivity, reinterment, tribal youth initiatives, natural resources and rivercane. Tribal representatives also participate in TVA outreach events.

TVA consults with Tribes regarding the repatriation and disposition of human remains and other cultural items as defined in the Native American Graves Protection and Repatriation Act. TVA completed repatriations for 28

archeological sites and completed dispositions for one archeological site in consultation with Tribes in 2021. During the past 12 years, TVA has repatriated more than 9,000 human remains and 176,000 funerary objects and completed disposition of 55 ancestral remains and more than 100 funerary objects.

TVA began a tribal cultural history project in 2021. TVA facilitated a series of virtual presentations for Tribes to present their history, culture and perspective to TVA archaeological staff and contractors. Eleven Tribes participated in this opportunity.

In accordance with the Presidential Memorandum of January 26, 2021 (Tribal Consultation and Strengthening Nation-to-Nation Relationships), TVA prepared an [action plan](#) to implement the policies and directives of Executive Order 13175. This detailed action plan was developed in consultation with Tribes.



Permitting and Land Use

As a steward of critically important natural and cultural resources across the Tennessee Valley, TVA has a duty to manage public land sustainably for present and future generations.

The lands and shoreline along TVA reservoirs are special places. In an effort to best manage the use of these reservoir lands and waters, we follow land-use policies and Section 26a regulations. Section 26a of the TVA Act requires that TVA's approval be obtained prior to the construction, operation or maintenance of any dam, appurtenant works, or other obstruction affecting navigation, flood control, or public lands or reservations along or in the Tennessee River or any of its tributaries. This past year was record-setting for Section 26a permit applications and environmental reviews, with 2,400 permit applications received.

As we manage these spaces, we strive to:

- Balance competing demands to provide public access to the reservoir while protecting natural and cultural resources and TVA's management of the Tennessee River system
- Provide consistent guidance to support use and development of eligible public lands and shoreline for residential, commercial recreation, public and industrial purposes
- Support community development and growth by making TVA public lands and shoreline available for infrastructure and public use
- Provide an interface between TVA and landowners around TVA reservoirs

Waste Management

We are committed to ensuring sustainable management and safe, long-term storage of the waste produced by our operations. We manage environmental operating permits for solid waste, landfills and other waste management activities. Additionally, we coordinate and support environmental compliance activities associated with hazardous and solid waste, polychlorinated biphenyls (PCBs), asbestos and other waste for all operating facilities and sites in a manner that protects health and the environment.

TVA is an industry leader in the safe, secure monitoring and management of coal combustion residuals (CCR), which are a non-hazardous byproduct of burning coal for electricity. TVA has pioneered new technology using the best science, data and research to ensure our coal ash sites are secure, which has enabled us to implement best practices years before they were required by the 2015 federal CCR rule. For example, six years before the CCR rule was enacted, TVA committed to eliminating wet handling of CCR materials. We have fully implemented our program to convert the coal plant CCR wet processes to dry generation or dewatering systems and ceased flows to all wet coal ash handling units.

In calendar year 2021, TVA beneficially reused 59% of all CCRs produced. TVA has also built lined and permitted dry storage facilities at some TVA locations, allowing these facilities to operate beyond existing dry storage capacity. TVA maintains a robust groundwater monitoring program with a network of more than 450 monitoring wells at our CCR sites to protect natural resources.

59%
of TVA's coal
combustion
residuals were
recycled in 2021

Social:

Serving People and Communities Across the Region

Serving the region’s communities is an important part of our mission of service. From partnering with local power companies to provide community energy to offering environmental education that engages communities in caring for the environment, TVA is helping build a better tomorrow. Through our Valley Public Power Model, we invest revenue into the communities we serve.

We are built to serve. We have created programs to assist consumers in underserved communities and those struggling with a high energy burden. Whether providing relief during the COVID-19 pandemic or supporting cleanup and rebuilding efforts after severe weather events, TVA is there to help.



Social Snapshot

Metric	FY 2019	FY 2020	FY 2021	FY 2021 Highlights
Recordable Incident Rate	0.46	0.34	0.26	TVA’s continued focus on Safety as a Core Value has supported our achievement of industry top decile performance in recordable incident rate and top quartile performance in serious injury incident rate in 2021.
Serious Injury Incident Rate	0.07*	0.03*	0.03	
Capital investment in the Valley (\$B)	\$8.9	\$8.6	\$8.8	In addition to matching funds provided through Community Care contributions (noted in chart), TVA contributed nearly \$3 million to organizations across the Valley and distributed meals to 1 million families through our partnership with Feeding America.
Community Care Fund	New in 2020	\$2,563,651	\$1,771,177	
Environmental and Community Engagement (# children participating)	10,325	2,615	26,777	As the COVID-19 pandemic continued in 2021, TVA offered some educational programs in a virtual format and held in-person events with limited numbers of attendants and in compliance with strict safety guidelines.
People of color share of workforce (%)	11.80%	10.99%	11.24%	Last year, we elevated Inclusion as a Core Value, created a Chief Diversity & Inclusion Officer, intensified our efforts to focus on Inclusion with Diversity, and created a framework that is enhancing education, dialogue and engagement across the organization.
Women share of workforce (%)	20.10%	20.08%	20.37%	
Military share of workforce (%)	18.10%	18.06%	17.88%	
Training for career advancement (hours/employee)	73.70	64.02	68.65	TVA invests in our workforce through a strategy of 70% on-the-job training, 20% informal learning and 10% formal training, and we offer tuition reimbursement to all full-time, annual employees with a minimum of two years of service.
Continuing education contributions	\$443,789	\$567,715	\$436,764	

* Revised due to reclassifications



Local Power Company Partnerships

At TVA, our partnerships with local power companies are critical to the work we do. TVA and local power companies make a positive impact in our communities through economic development, environmental stewardship and delivering reliable, low-cost and clean power. Through our Valley Public Power Model, we invest revenue into the communities we serve.

TVA is working closely with local power companies and other stakeholders on a new initiative, Valley Vision 2035, which is designed to enhance collaboration as we collectively navigate market transformation and innovation. Achieving decarbonization will require everyone to think outside the box and work together. Valley Vision 2035 will help ensure the Valley Public Power Model works for the people of the region for decades to come.

In 2021, TVA and local power companies worked together to help provide relief during the COVID-19 global pandemic. TVA provided a pandemic relief credit, which gave a 2.5% credit to local power companies and their large commercial and industrial customers as well as TVA direct-served customers. This credit provided \$221 million to customers who knew what their communities needed the most in 2021.

TVA and local power companies also created a Community Care Fund, which has provided nearly \$9 million through 2021 to address hardships created by the COVID-19 pandemic. Local power companies have donated to more than 600 Valley organizations in need, and TVA matched those funds. That's the power of community energy; that together with local power companies, we're able to invest in our communities to make our lives and our future better.

Community Care Fund

Provided nearly
\$9 Million
through 2021
by TVA and LPC matching funds

LPCs have donated
to more than
600 Valley
Organizations



Public Health and Safety

TVA uses all 49 dams to manage reservoir levels and river flows to balance the competing demands of the Tennessee River system: flood control, navigation, hydroelectric generation and recreation, water quality and supply.

Our dams and reservoirs are a vital part of the Tennessee Valley. TVA Dam Safety teams protect lives and property by helping ensure our dams are designed, constructed, operated and maintained for safety and reliability.

TVA worked on or completed nine dam safety projects in 2021. In 2015, after identifying a sinkhole near the base of the embankment at Boone Dam in Kingsport, Tennessee, TVA began work to develop a solution — the construction of a floodwall to return the embankment to its original height. As of September 30, 2021, TVA had spent \$300 million related to this project. TVA expects the reservoir to return to normal operations in 2022 and is continuing to work with the community to mitigate local impacts of the extended drawdown.

Further, our nuclear fleet—the nation's third-largest—has a generating capacity of approximately 8,000 megawatts and is the backbone of our clean generation portfolio. As we operate our nuclear fleet safely and efficiently, we are investing in projects to continue to improve safety, increase power output and extend unit operating life. Our nuclear plants have multiple safety systems in place to keep our workforce and the communities we serve safe. Safety systems include physical barriers that protect against radiation release, and layers of redundant and diverse back-up 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.

Reservoir and Stewardship Benefits

As a steward of the Tennessee Valley, TVA provides environmental education, volunteer opportunities and support to engage communities in promoting outdoor activities and caring for the environment.

In 2021, we employed best practice safety measures to reduce the spread of COVID-19 while continuing our mission of environmental stewardship and education. In-person World Water Monitoring and Bioblitz events were held with a limited number of attendants and complied with safety guidelines. We offered additional educational programs in a virtual format to increase learning opportunities. We engaged with more than 1,200 children through 74 outreach and environmental education programs across the Valley.



TVA EMPLOYEE HIGHLIGHT: JERRI DOLAN



When TVA’s environmental focus mixes with its energy mission, it can make for some pretty interesting work.

That’s what TVA Environmental Scientist Jerri Dolan found out when ospreys took a liking to roosting on TVA structures at Watts Bar Nuclear Plant.

With an average wingspan of five feet, an osprey’s fully spread wings are capable of touching closely-spaced, energized equipment or connecting an energized wire and a ground wire.

“While osprey populations continue to grow, roosting birds and electricity don’t mix,” said Dolan. “TVA is taking a proactive approach to preventing future impacts to these federally protected birds of prey and lowering the risks to energy infrastructure that could

cause service disruptions and safety issues.”

Teaming up with TVA Natural Resource Specialist RJ Moore and members of the TVA Transmission team, Dolan and her colleagues developed an osprey mitigation strategy that creates alternative roosting platforms away from active transmission lines and incorporates the installation of deterrents upon the transmission poles to promote safer roosting opportunities. The new platforms also help support data collection for collaborative research by TVA, Mississippi State University and USDA Wildlife Services. That data provides valuable information for TVA’s Avian Management Plan.

“To increase the appreciation of our natural resources and to be able to protect them while successfully blending the needs of TVA’s mission and the people we serve is sustainability at its best,” says Dolan. “It’s a win-win that makes my job truly rewarding.”

We are committed to working with partners to protect and preserve the environment and to support thriving recreation and tourism in the region. As examples:

- We partnered with Virginia Tech and Virginia Highlands Community College on the installation of a second salamander eco-passage tunnel near Osceola Island at the South Holston Dam Reservation. Ongoing research shows the first tunnel, installed in 2018, is used by amphibians and reptiles for safe passage during migration. The second tunnel will provide even more coverage and reduce mortality in the threatened species that use the passage.
- We continue our research project with Mississippi State University to understand interactions between osprey and manmade structures and to explore options for addressing raptor roosting sites on TVA structures. This project’s goal is to protect TVA transmission assets while taking proactive measures to relocate the birds. TVA and our partners banded six juvenile ospreys and monitored the relocated roost sites to reduce impacts to the birds and power operations near Gunter’sville, Melton Hill and Watts Bar reservoirs.
- We partnered with the University of Tennessee Institute of Agriculture and the University of Georgia to study the economic impacts of TVA’s stream access points throughout the Tennessee River watershed for paddlers. The study indicates visitors to these sites contribute \$44.4 million in recreational spending, support up to 624 full- and part-time jobs, and contribute nearly \$13 million in labor and personal income.



Tennessee RiverLine

When TVA first went to work building dams to harness the Tennessee River in 1933, a system of recreational trails that ran the entire 652-mile length of the wild river would have been unthinkable. Now it’s becoming reality, thanks to the Tennessee RiverLine program and its principal partners, the University of Tennessee and TVA.

The RiverLine is a regional initiative working to create a network of paddling, hiking and biking experiences that will stretch along the Tennessee River from Knoxville, Tennessee, through Alabama to Paducah, Kentucky — a continuous water trail system that will celebrate the beauty and diversity of the Tennessee River, connect the communities along its banks and catalyze sustainable economic growth in its watershed.

TVA joined UT as a founding member of the Tennessee RiverLine Partnership in 2019, and in 2021, we committed to investing \$1.2 million over three years as a principal partner in the program. Currently, the partnership is focused on developing the RiverTown program, which encourages local communities to join the Tennessee RiverLine as partners on its mission. Including five new participants in the 2022 cohort, 20 communities are now enrolled in the RiverTown program. Together, these diverse river communities are home to more than a million residents who share in the RiverLine’s vision of becoming North America’s next great regional trail system.

Stakeholder Engagement

Who	Why
Local Power Companies and Direct-Served Customers	Our partnerships with our local power companies and direct-served customers are critical to the continued success of the Valley Public Power Model. Throughout our 89-year history, we have worked together to ensure the region's communities are sustainable and resilient.
Communities	TVA was built to make life better for the people of the Tennessee Valley region. Strong relationships with communities allow us to identify the issues and achieve the goals that are most important to our shared future.
Federally Recognized Tribes	TVA public lands have religious and cultural significance to over 20 federally recognized Tribes.
Suppliers	By maintaining a competitive supplier base reflective of the diversity of the region, TVA contributes to the economic prosperity of the communities we serve while supporting small and diverse businesses.

How
<ul style="list-style-type: none"> ▪ Offering Partnership Agreements to local power companies, ensuring long-term stability for the region's energy system while providing increased flexibility in local power production ▪ Enhancing coordination through the Valley Vision 2035 initiative ▪ Partnering to offer COVID-19 relief through the Pandemic Relief and Pandemic Recovery Credits and the Community Care Fund ▪ Supporting sustainability goals through innovative TVA Carbon Accounting, which provides a personalized carbon footprint to each customer ▪ Providing a local account owner to understand and support TVA's response to unique customer and end-user needs
<ul style="list-style-type: none"> ▪ Supporting civic activities specifically important to TVA's core business objectives and key stakeholders ▪ Hosting open houses and public meetings to directly engage stakeholders on issues that impact their communities ▪ Proactively partnering with key Valley-wide nonprofit organizations delivering disaster relief and helping meet basic needs ▪ Contributing to our local youth by conducting and supporting educational programs such as robotics and STEM ▪ Assisting communities with sustainability strategy developments and commitments through the Valley Sustainable Communities program ▪ Offering residents and businesses energy optimization programs that encourage energy saving behaviors, practices or projects
<ul style="list-style-type: none"> ▪ Hosting annual meetings to foster open discussion and collaboration of issues related to public land and cultural resource stewardship ▪ Consulting with Tribes regarding the management and protection of significant Native American sites pursuant to the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, and numerous executive orders and memoranda. ▪ Facilitating educational opportunities presented by Tribal representatives to continuously improve the public's and TVA workforce's knowledge of Native American history, culture and perspective
<ul style="list-style-type: none"> ▪ Establishing Supplier Diversity Stakeholder Advisory Council and Supplier Mentoring Program

Who	Why
Investors	TVA is a wholly-owned government corporation that is self-supported from revenues and power system financings. TVA relies on the sale of bonds and notes in the public capital markets to fund power system investments.
Federal, State and Local Government Agencies and Elected Officials	TVA is a government-owned corporation with unique responsibilities as a federal agency. We are focused on strengthening our relationships with our agency partners to support the continued success of the Valley Public Power Model.
Non-Governmental Organizations	Non-governmental organizations provide valuable insight and guidance on emerging issues. TVA coordinates with multiple social and environmental organizations to develop long-term and balanced solutions to issues material to local communities.
TVA Employees	At TVA, our strength is our people. The continued commitment of our talented, diverse workforce enables TVA to carry out our mission of service.
Universities and Research Partners	Partnering with universities and other research organizations to identify, research and demonstrate new technologies that have a promising potential to impact the energy system of the future and the Tennessee Valley.

How
<ul style="list-style-type: none"> ▪ Responding to increased investor interest in Environment, Social and Governance (ESG) through the first TVA Green Bond offering in alignment with TVA's Sustainable Financing Framework
<ul style="list-style-type: none"> ▪ Partnering with multiple agencies to advance environment stewardship, economic development and energy innovation ▪ Participating actively in ongoing conversations around regulatory, environmental and policy issues
<ul style="list-style-type: none"> ▪ Enhancing transparency in planning and performance ▪ Offering opportunities for non-governmental organizations and community members to engage directly with TVA staff, including open houses, public board meetings and collaborative groups (e.g. Regional Energy Resource Council and Regional Resource Stewardship Council) ▪ Complying fully with NEPA public comment period requirements and responding to public concerns
<ul style="list-style-type: none"> ▪ Enabling nine Employee Resource Groups focused on identity, experience or interests to foster employee engagement, education and dialogue ▪ Assessing employee perceptions of TVA as an ethical company through a third-party survey, and leveraging survey results to further strengthen TVA's ethical culture ▪ Maintaining strong relationships with 17 collective bargaining agreements, representing around 60% of the workforce ▪ Supporting our employees through COVID-19 by expanding benefits and workplace flexibility
<ul style="list-style-type: none"> ▪ Providing education and awareness opportunities to our employees and colleagues through various seminars, presentations, etc. ▪ Soliciting research ideas through our annual solicitation process ▪ Establishing meeting cadences with universities ▪ Supporting individual projects with grants ▪ Working with partners to bring startup companies to the Valley ▪ Mentoring and supporting startup companies ▪ Establishing better relations with Historically Black Colleges and Universities ▪ Serving as advisors on various research programs with our partners ▪ Leveraging available resources of the various partners to identify and secure additional funding for coordinated efforts

Community Engagement

Community engagement is an important part of our mission to make life better for people in the region. TVA recently shifted to a regional model that divides our service area into four quadrants (North, South, East and West). The change is helping us better identify local community needs and align our priorities and resources to match those needs.

In 2021, we distributed 1 million meals to families in need through our partnership with Feeding America, and we collected 3,500 pounds of food for people at the holidays. We contributed \$800,000 in grants to

\$800,000
in STEM Grants
Donated to Tenn. Valley Schools

STEM educators in partnership with Bicentennial Volunteers Incorporated, and we donated \$100,000 to those impacted by the Nashville bombing.



UNDERSERVED COMMUNITIES

We have created programs to assist consumers in underserved communities and those struggling with a high energy burden. Energy programs such as Home Uplift and School Uplift fall under our broader Environmental Justice initiative.

TVA partners with over 50 local power companies to provide the Home Uplift program to qualified low-income residents who live in homes in need of energy upgrades to lower energy bills and increase comfort. Each year, additional local power companies enroll in the program and expand the program's reach across the Valley. More than 2,700 homes have been upgraded so far, with about 750 families positively impacted in 2021 alone.

Launched in 2020, School Uplift is a 12-month training program that uses behavior-based techniques to help public schools make smart energy choices that improve the classroom learning environment and save money through decreased energy use. We are investing more than \$7 million in public K-12 schools over the three-year pilot. We have helped a total of 60 schools during the first two years of School Uplift, with a target of reaching an additional 100 schools

during the 2022-23 school year. On average, participating schools saved nearly 15% on their annual energy bills that can be reinvested in educating students.

Community Centered Growth (CCG) is a targeted pilot offering intended to bring communities together by improving relationships, attracting sustainable businesses and stimulating existing small businesses. CCG partners with local power companies to target economically distressed, community-based small businesses in need of energy upgrades that result in lower energy bills and higher profit margins. TVA upgrades these technologies free of charge to the businesses up to a specified budget amount. The most common energy upgrades are indoor lighting, security lighting, HVAC and kitchen equipment.

TVA EMPLOYEE HIGHLIGHT: JANICE HORN



Janice Horn is passionate about helping others. As TVA's senior program manager of Environmental Justice, she wants people to know that every voice matters — and TVA is listening.

A chemical engineer with a robust resume, Horn has been a TVA

employee for 16 years and in her new role since September 2021.

Under her leadership, TVA's Environmental Justice work is becoming more structured to align with Biden administration Executive Orders directing federal agencies to address disproportionate health, environmental, economic and climate impacts on

disadvantaged communities.

TVA has established a multidisciplinary core team that is creating a framework for how TVA will identify disadvantaged communities and their needs; improve our communication and services; and plan strategically so we consider our impact on communities when we make operational decisions.

"Environmental justice and equity go hand-in-hand," Horn says.

Disadvantaged communities face challenges of poverty — from high unemployment rates; to energy, food and transportation insecurity; to lack of access to phone and Internet services.

"TVA is a service organization, and together with our partners, we work to improve the quality of life for all people in the Valley," Horn says. "It's not often that people get to say they are passionate about their work, but I really am passionate about my work. I believe in TVA."



Community Energy Management Programs

TVA partners with local power companies to ensure residents, businesses and communities across the Valley have access to energy-saving programs and information. Ultimately, the cleanest kilowatt-hour is one that doesn't have to be generated. That's why TVA is investing in energy efficiency programs – over \$25 million in fiscal year 2021. TVA EnergyRight® programs ensure consumers have the right tools and information to feel confident in their energy decisions and live more sustainably.

Business and Industry: services to help businesses better manage their energy use, including incentives for energy efficient technologies; access to TVA's Preferred Partners Network of trained contractors; and My Energy Advisor online energy management platform.

Residential Services: services and resources that help residential consumers optimize their home's energy efficiency, including free Home Energy Evaluations, access to TVA's Quality Contractor Network, financing for approved energy upgrades; and expert advice on home energy upgrades.

Demand Response: programs that offer businesses and organizations the option to reduce their energy usage during times of peak demand and receive energy credits. Demand Response benefits the Valley by enhancing power reliability, reducing energy costs and providing an alternative to building additional power plants to meet occasional peak energy requirements. In 2021, nearly 1,500 megawatts of capacity were offset through Demand Response.

Federal Energy Services Program: Valley federal facilities can benefit from services to help meet their energy goals and mandates in a cost-effective manner by enabling them to contract for energy efficiency, renewable energy and water conservation services on a sole source basis with no capital investments.

Supporting the Workforce of the Future

At TVA, people are at the center of everything we do. To better support our workforce, we are on a focused multi-year journey to evolve our culture and make TVA an even greater place to work. That means building a culture that values inclusion with diversity, continuing to focus on safety, and providing additional employee support to enhance well-being.

PEOPLE ADVANTAGE

Without a doubt, people are the strength of TVA. Our workforce's ideas, innovation and heart to serve help us achieve our mission of improving the quality of life in the Tennessee Valley.

At TVA, we have five Strategic Priorities: People Advantage, Operational Excellence, Financial Strength, Powerful Partnerships and Igniting Innovation. Our People Advantage priority is anchored on three pillars: Inclusion with Diversity, Talent and Engagement.

We are on a focused multi-year journey to evolve our culture and to make TVA an even greater place to work. We are focused on building an inclusive work environment and on continuing to develop a workplace where employees are engaged and feel they can successfully grow their careers.

401(k) Named Among Best in Class Nationwide
by PLANSPONSOR



INCLUSION WITH DIVERSITY

At TVA, we are building a culture that values Inclusion with Diversity (IwD).

In recent years, we have elevated Inclusion as a Core Value, created a Chief Diversity & Inclusion Officer position, intensified our efforts to focus on IwD and created a framework that is enhancing education, dialogue and engagement across the organization.

We created an Inclusion with Diversity Council that provides enterprise alignment between our Diversity & Inclusion program and senior leadership as well as the Strategic Business Unit (SBU) Inclusion Councils that advance inclusion work within each of our six SBUs. The cross-functional structure has strengthened our focus and improved collaboration related to IwD across TVA.

The IwD structure also includes nine Employee Resource Groups (ERGs), which are employee-led volunteer organizations based on identity, experience or interests. They bring value to TVA and our employees by focusing on the Three C's: Culture, Career and Community.



TVA Works with Mosaic Program

As TVA accelerates our efforts on Inclusion with Diversity, we are recognizing neurodiversity — the range of differences in individual brain function and behavioral traits.

TVA works with the Mosaic Program at the University of Tennessee at Chattanooga (UTC). The program is designed for degree-seeking students on the autism spectrum. Students in the program are given guidance on entering the workforce, weekly academic and professional coaching, and supervised study hours. TVA provides internships to students in the program.

TVA benefits from welcoming interns from UTC's Mosaic Program into our workforce, because we are strengthened by their talent and are building a stronger, more inclusive pipeline of future talent.

SKILLED WORKFORCE

At TVA, about 60% of our workforce (6,000 employees) are represented by seven collective bargaining agreements and a total of 17 labor unions. Our partnerships with these unions go back more than 80 years and form the backbone of TVA and our ability to serve the people of the Tennessee Valley.

We have a long-standing policy of acknowledging and working with recognized representatives of our employees, and that policy is reflected in long-term agreements to recognize the unions (or their successors) that represent TVA employees.

TVA and our six Trades and Labor unions in association with the Teamsters have partnered for four years under the TVA Trades and Labor Annual Council's Code of Excellence (COE) as part of efforts to improve working conditions and labor-management relationships. The COE is a union-led, cooperatively administered partnership that promotes the highest quality work, best work practices and the highest skilled workforce. It builds common ground between TVA and these unions, strengthens trust and engagement between the parties, and reinforces professional expectations of both parties.

Awards

#2 in Utility

Forbes 2021 America's Best Large Employers

Top 5 in Tennessee

Forbes Best Employers by State 2021

Top 10 Diversity Action Award

2021 Diversity Impact Awards™

Top 100 Ranked

2021 America's Most Loved Workplaces®

(Newsweek in partnership with Best Practice Institute)

HEALTH AND SAFETY

Safety is one of TVA's Core Values. We want our employees to return home to their families each day just as healthy as when they left for work. Our safety program emphasizes management commitment, employee engagement, risk and hazard recognition and control, worksite analysis, contractor safety management, training, review and continuous improvement.

TVA's safety accomplishments in 2021 include consistent decline in recordable injuries and illnesses, and industry top decile performance in recordable injury rate and top quartile performance in serious injury rate. Employee engagement is critical to the success of our safety program. TVA's vital safety behaviors are employee-driven and developed with the collaboration of represented employees, union leadership and management.

COVID-19 spurred us to provide additional employee support to enhance well-being and ensure the retention of valuable talent. This support includes establishing a mental health advocacy program, providing unlimited Employee Assistance Program sessions, enhancing paid leave, offering tutoring resources, and providing onsite vaccination clinics and wellness incentives for vaccinations. In 2020, TVA established an Employee Relief Fund to support employees adversely affected by the pandemic and natural disasters, and we continue those distributions to this day.

Top 10 Military Friendly® Employer

Best in Class 401(k) Plan

One of the Largest U.S. Contributors

Helmets to Hardhats Program

Inclusion by Design Award

Chattanooga Urban League



Governance: Driving Progress through Accountability and Transparency

Our governance structure is critical to driving sustainability performance. As a government-owned corporation, our mission of service is fundamentally different from that of publicly traded companies. We built a governance structure within the company that provides the oversight and outside perspective capable of driving progress.

We maintain high ethical standards and are committed to full transparency and engagement with stakeholders, because engagement is a key tool in strengthening our work toward a sustainable future. To protect our assets and information, we leverage federal entities and other partners to better identify, detect, protect and respond to potential cyber and physical attacks.



Governance Snapshot

Metric	FY 2019	FY 2020	FY 2021	FY 2021 Highlights
Federal Sustainability Report Disclosure	SR&IP and AEMR	SR&IP and AEMR	SR&IP and AEMR	TVA continues to expand our sustainability reporting practices and helps customers better understand the carbon emissions associated with their power purchases. 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	EEl-ESG Industry Template	EEl-ESG Industry Template	EEl-ESG Industry Template	
Customer Carbon Accounting Disclosure	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	
Tribal Engagement	51	36	57	TVA understands that meaningful engagement with the public and with our partners is critical to the continued success of the Valley Public Power Model. The Valley Vision 2035 initiative works to build coordination with stakeholders on strategic approaches to addressing the issues that are most important to the social, environmental and economic future of the region.
Stakeholder Survey	80%	80.2%	78.3%	
Operating Revenues (\$ million)	\$11,318	\$10,249	\$10,503	TVA's financial strength and stability is a competitive advantage that translates into lower energy costs. We've worked to sustain lower operating and maintenance costs since 2013, improving both productivity and efficiency. In FY 2021, total financing obligations were reduced to the lowest in over 30 years.
Operating Cash Flow (\$ million)	\$3,720	\$3,636	\$3,256	
Total financing obligations (\$B)	\$22.8	\$21.4	\$20.5	
Net Income (\$ million)	\$1,417	\$1,352	\$1,512	In FY 2021, TVA invested \$1.8 million on efficiency improvements, resulting in \$209,315 in annual savings and 2,449 megawatt hours in energy consumption savings. Since 2008, TVA has saved enough cumulative energy to power 64,200 homes for one year or enough cumulative CO ₂ to offset 145,250 vehicles driven for one year.
Building energy intensity (% reduction)	64.3%	69.3%	74.8%	
Building potable water intensity (% reduction)	36.9%	48.0%	40.6%	
Fleet (vehicle) petroleum consumption (% reduction from baseline)	28.4%	40.3%	49.9%	

SR&IP – Sustainability Report and Implementation Plan AEMR – Annual Energy Management Report



TVA's Governance Structure

Our governance structure is critical to driving sustainability performance. As a government-owned corporation, our mission of service is fundamentally different from that of publicly traded companies. We built a governance structure within the company that provides the oversight and outside perspective capable of driving progress.

TVA is self-sustaining and self-funded and receives no public tax dollars. TVA has oversight similar to other utilities that includes a Board of Directors, as well as Securities Exchange Commission (SEC) and Sarbanes-Oxley Act (SOX) requirements. In addition, TVA has oversight from Congress, the Government Accountability Office (GAO), Office of Management and Budget (OMB), the U.S. Treasury and an independent Office of the Inspector General (OIG). TVA's CEO-led Enterprise Leadership Team drives business strategy, including decisions relating to sustainability and risk management.

Transparency

TVA is committed to full transparency and engagement with stakeholders, because we believe engagement is a key tool in strengthening our work toward a sustainable future.

Our stakeholders often have divergent views and competing priorities. In our experience, collaboration with stakeholders leads to better outcomes. No matter how

Public Input Opportunities

Board Listening Sessions

TVABoard.gov

board@tva.gov

Regional Resource Stewardship Council (RRSC)

Regional Energy Resource Council (RERC)

Public Land Information Center (PLIC)

Complaint Resolution Process

Social Media

TVA Ombudsman

NEPA Process

complex the issue, we aim for the right long-term and balanced solutions that strengthen trust and confidence in TVA and help us transition to cleaner, smarter solutions for our customers and communities.

TVA takes steps to maintain transparency, respond to stakeholder inquiries and provide opportunities for engagement with our teams and leadership. We have multiple forms of outreach and specific staff that work with stakeholders to proactively provide information and listen to feedback on TVA actions and issues of interest to them.

TVA also has several stakeholder advisory groups and community action groups and hosts public meetings and TVA Board of Director listening sessions. Our two formal advisory councils — the [Regional Energy Resource Council](#) and the [Regional Resource Stewardship Council](#) — provide valuable input on numerous topics, including sustainability. At a joint meeting held virtually in December 2020, Council members provided advice on how to improve our annual Sustainability Report. They also provided input on our carbon strategy and biodiversity policy.

In 2021, TVA held events virtually to provide opportunities for the public to learn about proposed TVA actions and provide comments as part of the National Environmental Policy Act (NEPA) compliance.

We maintain transparency related to our sustainability program through reporting that includes our:

- [Sustainability Report](#): Updated annually to share TVA's commitment to sustainability according to Global Reporting Initiative standards.
- [Edison Electric Institute Environmental, Social and Governance Report](#): For the financial community using the utility-focused and investor-driven reporting template developed by the Edison Electric Institute (EEI).
- [Federal Sustainability Report and Implementation Plan](#): Report addresses key aspects of our federal objectives and targets. We integrate our federal goals into our existing business operations, align with specific federal goals and metrics, and report on our progress.
- Our [Climate Action Adaptation and Resiliency Plan](#) and our ongoing voluntary participation in the [DOE Energy Sector Climate Resilience Partnership](#).

TVA Board and Executive Diversity

TVA recognizes the need to have a diverse Board of Directors. However, TVA has no control over or influence in the appointment process. TVA's Board members are nominated by the president of the United States and confirmed by the U.S. Senate.

Enterprise Risk Management

TVA's Enterprise Risk Council (ERC) is responsible for the highest level of risk oversight at TVA and for communicating enterprise-wide risks with policy implications to the TVA Board or a designated TVA Board committee.

The ERC is comprised of the Enterprise Leadership Team and the Chief Risk Officer, who acts as Chair. ERC members may invite additional attendees to meetings as non-voting participants. The ERC also has established subordinate committees, consisting of business unit leaders, to assist in the oversight of fuel and power procurement, Distributed Energy Resources programs and products, and general risk management.

A designated Enterprise Risk Management organization within our Financial Services organization is responsible for (1) establishing enterprise risk management policies and guidelines, (2) developing an enterprise risk profile aligned with TVA's strategic objectives, (3) performing annual risk assessments across all TVA business units, (4) monitoring and reporting on identified enterprise risks and emerging risks, (5) facilitating enterprise risk discussions with the risk subject matter experts across the organization and at the ERC and TVA Board levels, and (6) developing and improving TVA's risk awareness culture. TVA has cataloged major short-term and long-term enterprise-level risks across the organization.

Ethics

TVA is committed to maintaining high ethical standards and maintains a Code of Conduct, Executive Code of Conduct and Supplier Code of Conduct. Integrity is one of TVA's values. TVA's Executive Vice President, General Counsel and Designated Agency Ethics Official is responsible for TVA's Ethics and Compliance office, and for ensuring TVA and our workers and contractors have the proper programs to help us act with integrity, and to be honest and fair – in other words, to balance the interests of others above our own. It's part of TVA's unique mission of service. We require annual ethics training for all employees.

In 2021, TVA partnered with a third-party administrator to perform a program assessment and execute a survey that measured employees' perceptions of TVA's ethical culture. TVA is committed to leveraging the results from the assessment and survey to further strengthen TVA's strong ethical culture.

TVA confirms our commitment to fair hiring and employment practices by including an executive policy on Equal Employment Opportunity, maintaining an Equal Opportunity Compliance Office and stating equal opportunity information in our Code of Conduct. TVA provides equal opportunity in employment to all employees and applicants; and 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. [TVA's Equal Employment Opportunity Policy](#) is available on tva.com.

Cyber and Physical Security

TVA is leveraging federal entities and other partners to better identify, detect, protect and respond to potential cyber and physical attacks. While TVA and our third-party vendors and service providers have been, and will likely continue to be, subject to such attacks and attempts to disrupt operations, to date the attacks have not had a significant or material impact on business and have not impacted TVA's ability to operate as planned.

TVA operates in a highly regulated environment with respect to cybersecurity. Our cybersecurity program aligns or complies with the Federal Information Security Management Act, the NERC Critical Infrastructure Protection requirements, and the Nuclear Regulatory Commission requirements for cybersecurity, as well as industry best practices.

As part of the U.S. government, TVA coordinates and works closely with the U.S. Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA) and the U.S. Computer Emergency Readiness Team (US-CERT). CISA serves as the agency assisting other federal entities in defending against threats and securing critical infrastructure. US-CERT functions as a liaison between the U.S. Department of Homeland



Security and the public and private sectors to coordinate responses to security threats.

On May 12, 2021, President Biden signed Executive Order (EO) 14028, "Improving the Nation's Cybersecurity." This EO is intended to improve the nation's cybersecurity posture and protect federal government networks by improving information-sharing between the U.S. government and the private sector on cyber issues and strengthening the United States' ability to respond to incidents when they occur. TVA continues to evaluate and respond to the EO, associated OMB memorandums, and other emerging requirements in alignment with the order. TVA has submitted all reports as required, established response teams and an oversight structure, and initiated projects to address the required actions.

As a federal agency, we face potential threats to our facilities, generation and transmission systems, and supporting infrastructure. For the security of our physical assets and our workforce, we use multiple forms of prevention and detection tools, engage our partnerships with local and federal agencies, and employ TVA's own federal police force.

TVA EMPLOYEE HIGHLIGHT: ANDREW CRAIG

Cybersecurity at TVA has always been a priority, but now with geo-political tensions in Ukraine prompting Shields Up alerts from the U.S. Department of Homeland Security, the risk of cyberattacks against the nation's critical energy infrastructure is a threat that underscores the work of IT professionals like Andrew Craig.



Craig is a cybersecurity manager who leads TVA's assessments and testing team. It is their job to analyze the reputation and cybersecurity strength of technologies before they are connected to TVA networks and critical infrastructure. In addition, his team performs fleet-wide cybersecurity tests to measure TVA's cyber effectiveness.

Some of his team's techniques are to roleplay adversarial cyber actors by creating phishing emails that target employees and to perform penetration tests against TVA assets. Based on the percentage of emails that are flagged by employees as phishing attempts, Craig's team can effectively gauge the strength of TVA's employee firewall.

"People think it's all about our cybersecurity team, but every person in TVA has a responsibility just like with safety because I think cyber and safety go hand-in-hand. We have to have vigilance in both spaces," Craig said.

Craig says it's all about maintaining the resiliency and sustainability of the grid, and that means TVA's approach to cybersecurity is constantly evolving to thwart cyberattack.

"Hardening TVA systems against cyberattack is a continued investment."

Appendix A - Global Reporting Initiative (GRI) Metrics

Category	Topic	Key Performance Metric Name	FY 2019	FY 2020	FY 2021
102	General Disclosures	Total number of Board of Director Members	9	5	7
102	General Disclosures	Total number of Female Board of Director Members	1	0	1
102	General Disclosures	Total number of Minority Board of Director Members	1	0	1
102	General Disclosures	Total Number of Employees	10,009	9,989	10,192
102	General Disclosures	Winning Performance Payout (%)	1.16	1.37	1.42
102	General Disclosures	Total Owned Summer Net Capability at the end of year (MW) ⁷	33,727	32,750	32,433
102	General Disclosures	Owned Coal Summer Net Capability at the end of year (MW)	7,886	6,915	6,580
102	General Disclosures	Owned Natural Gas Summer Net Capability at the end of year (MW) ⁷	12,509	12,509	12,183
102	General Disclosures	Owned Nuclear Summer Net Capability at the end of year (MW)	7,922	7,922	8,275
102	General Disclosures	Owned Petroleum (Diesel) Summer Net Capability at the end of year (MW)	9	9	9
102	General Disclosures	Owned Total Renewable Energy Resources Summer Net Capability at the end of year (MW)	5,401	5,395	5,386
102	General Disclosures	Owned Biomass/Biogas Summer Net Capability at the end of year (MW)	0	0	0
102	General Disclosures	Owned Geothermal Summer Net Capability at the end of year (MW)	0	0	0
102	General Disclosures	Owned Hydroelectric Summer Net Capability at the end of year (MW)	5,400	5,394	5,385
102	General Disclosures	Owned Solar Summer Net Capability at the end of year (MW)	1	1	1
102	General Disclosures	Owned Wind Summer Net Capability at the end of year (MW)	0	0	0
102	General Disclosures	Owned Other Summer Net Capability at the end of year (MW)	0	0	0
102	General Disclosures	Total Owned Net Generation (GWh)	139,129	134,386 ¹⁰	139,300 ¹⁰
102	General Disclosures	Nuclear Generation (GWh)	63,433	64,531 ¹⁰	66,265 ¹⁰
102	General Disclosures	Natural Gas and/or Oil Fired Generation (GWh)	31,704	33,479 ¹⁰	33,290 ¹⁰
102	General Disclosures	Coal-fired Generation (GWh)	27,934	19,732 ¹⁰	23,391 ¹⁰
102	General Disclosures	Hydroelectric Generation (GWh)	16,058	16,644 ¹⁰	16,354 ¹⁰
102	General Disclosures	Petroleum Generation (GWh)	0	0	0
102	General Disclosures	Total Renewable Energy Resources Generation (GWh)	16,058	16,644 ¹⁰	16,354 ¹⁰
102	General Disclosures	Total Purchased Power Generation (GWh)	21,945	19,435 ¹⁰	20,478 ¹⁰
102	General Disclosures	Purchased Power Renewable Generation (GWh)	7,840	7,683 ¹⁰	7,269 ¹⁰
102	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 2019	FY 2020	FY 2021
102	General Disclosures	Investor Sustainability Report Disclosure	EI-ESG Industry Template	EI-ESG Industry Template	EI-ESG Industry Template
102	General Disclosures	Customer Carbon Accounting Disclosure	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting	Annual Customer Carbon Accounting
201	Economic Performance	Operating Revenues (\$M)	11,318	10,249	10,503
201	Economic Performance	O & M Expense (\$M)	3,090	2,720	2,890
201	Economic Performance	Non-Fuel Delivered Cost of Power (cents/kWh)	3.46	3.20	3.22
201	Economic Performance	Retail Rate (cents/kWh)	9.33	9.14	9.18
201	Economic Performance	Incremental Annual Electricity Savings from EE (MWh)(CY)	32,377	101,138	19,777
201	Economic Performance	Incremental Annual Investment in EE programs \$(CY)	21,406,000	15,660,000	25,386,000
201	Economic Performance	Operating Cash Flow (\$M)	3,720	3,636	3,256
201	Economic Performance	Net Income (\$M)	1,417	1,352	1,512
201	Economic Performance	Total Spend (\$M)	4,467	4,441	5,144
201	Economic Performance	Total Financing Obligations (\$B) ⁸	22.8 ⁸	21.4	20.5
201	Economic Performance	Nuclear Unit Capability Factor (%)	89.80%	90.00%	90.50%
201	Economic Performance	Load Not Served (System Minutes)	3.7	2.7	3.2
201	Economic Performance	Reliability Rating (Transmission System) (%)	99.999%	99.999%	99.999%
201	Economic Performance	Inventory Value—Materials and Supplies Inventory (\$M)	742	770	775
201	Economic Performance	External Nuclear Performance Measures (%)	80.4%	85.1%	91.1%
201	Economic Performance	Total Annual Capital Expenditures (\$M)	1,700 ⁹	1,643 ⁹	1,963 ⁹
201	Economic Performance	Coal Equivalent Availability Factor (EAF)(%)	65.20%	79.40%	71.60%
201	Economic Performance	Combined Cycle Equivalent Availability Factor (EAF)	78.90%	84.00%	85.30%

Category	Topic	Key Performance Metric Name	FY 2019	FY 2020	FY 2021
201	Economic Performance	Economic Development - Capital Investment in the Valley (\$B)	8.9	8.6	8.8
202	Market Presence	Commercial Retail Electric Customer Count (at end of CY) ⁵	17	17	17
202	Market Presence	Industrial Retail Electric Customer Count (at end of CY) ⁵	43	43	43
202	Market Presence	Residential Retail Electric Customer Count (at end of CY) ⁵	0	0	0
203	Indirect Economic Impacts	Jobs Created or Retained (#)	66,500	67,000	80,900
203	Indirect Economic Impacts	Flood Management: Avoided Flood Damage (\$M)	1,600	1,000	170
204	Procurement Practices	Supplier Diversity: Total Diverse Business Spend (\$M)	395	388.5	365
204	Procurement Practices	Supplier Diversity: Diverse Business Utilization (%)	13.70%	14.20%	10.80%
204	Procurement Practices	Supplier Diversity: Total Small Business Spend (\$M)	766	844	856
204	Procurement Practices	Supplier Diversity: Small Business Utilization (%)	26.60%	32.30%	25.20%
204	Procurement Practices	Supplier Diversity: Total Valley Business Spend (\$B)	2	1.8	1.8
204	Procurement Practices	Valley Spend Utilization (%)	68.80%	65.20%	52.80%
301	Materials	Waste: Coal Combustion Products Beneficially Used (%) (CY)	45%	87%	59%
302	Energy	Performance Contracting - Investment Value (\$M)	4.91	3.3	2.5
302	Energy	Sustainable Buildings Progress (% reduction from baseline: GSF)	22.00%	22.00%	22.30%
302	Energy	Building Energy Intensity Progress (% reduction from FY2003: Btu/GSF) (EO 13834)	64.30%	69.30%	74.80%
302	Energy	Building Renewable Energy Use (% renewable sources) (EO 13834)	18.30%	18.70%	20.20%
303	Water and Effluents	Building Potable Water Intensity Progress (% reduction from FY2007: Gal/GSF) (EO 13834)	36.90%	48.00%	40.60%
303	Water and Effluents	Water Supply: Freshwater Consumption Rate (All Generation) (Billions of Liters/Net MWh)(CY)	6.00E-07	8.00E-07	8.00 E-07
303	Water and Effluents	Water: Total Water Withdrawal-non consumptive (Billions of Liters/Net MWh) (CY))	0.000112	8.23E-05	8.23 E-05
304	Biodiversity	Total Acres of Habitat Protected (# acres)	247,706	247,104	247,098
305	Emissions	Clean Energy (Power from carbon-free sources delivered) (%)	54%	57%	56%
305	Emissions	Scope 1 and 2 GHG Emissions (% reduction from FY 2008)	41.60%	51.00%	58.40%
305	Emissions	Scope 3 GHG Emissions (% reduction from FY 2008) ³	31.97%	54.80%	58.90%

Category	Topic	Key Performance Metric Name	FY 2019	FY 2020	FY 2021
305	Emissions	CLIMATE: TVA CO ₂ Tons from Owned Generation (metric tons) reported in CY	43,090,822	34,237,908	38,436,662
305	Emissions	CLIMATE: TVA Emissions (Owned CO ₂ Tons/GWh)	307	288	303
305	Emissions	CLIMATE: TVA Emissions (Owned CO ₂ Metric Tons/ Net MWh)(CY/FY)	0.31	0.255	0.276
305	Emissions	CLIMATE: Purchased Generation CO ₂ Emissions (metric tons)	13,543,114	6,521,407	7,192,903
305	Emissions	CLIMATE: CO ₂ Emissions rate - System TVA Scope 2 CO ₂ Emissions Rate (Owned and Purchased lbs/MWh) reported in CY	741.66	561.92	637.67
305	Emissions	CLIMATE: Owned and Purchased Generation CO ₂ Emissions (metric tons)	56,633,937	40,759,315	45,630,413
305	Emissions	CLIMATE: Owned and Purchased Generation Emissions (Owned and Purchased CO ₂ Metric Tons/ Net MWh)(CY/FY)	0.352	0.265	0.286
305	Emissions	CLIMATE: TVA CO ₂ e Scope 1 Emissions (metric tons) (CY)	43,696,845	34,762,588	40,374,877
305	Emissions	CLIMATE: TVA CO ₂ e Scope 2 Emissions (metric tons) (CY)	200,153	170,039	142,802
305	Emissions	CLIMATE: TVA CO ₂ e Scope 3 Emissions (metric tons) (CY) ³	73,994.45	66,967	68,467
305	Emissions	Air: TVA SO ₂ Emissions (metric tons) (CY)	26,972	17,082	25,226
305	Emissions	Air: TVA NO _x Emissions (metric tons) (CY)	19,430	12,577	15,210
305	Emissions	Non-Generation Fugitive CO ₂ e Emissions: Sulfur Hexafluoride (metric tons) (CY) ⁶	324,987.9	35,541.2	74,618.9
305	Emissions	Air: TVA Mercury Emissions (kg) (CY)	50.1	17.5	22.3
306	Effluents and Waste	Non-hazardous Municipal Solid Waste Diversion (% diverted / recycled) ²	4.53%	3.90%	2.98%
306	Effluents and Waste	Waste: Low-level radioactive waste disposal rate (ft ³ /MWh) (CY)	0.003367	0.00197	0.002533
306	Effluents and Waste	Waste: Amount of Hazardous Waste Disposed (metric tons) (CY)	93.67	93.13	50.1
307	Environmental Compliance	Compliance: Notice of Violations (NOV)	4	6	1
403	Occupational Health and Safety	Safe Workplace (RIR)	0.46 ¹	0.34 ¹	0.26
403	Occupational Health and Safety	Lost Time Case Rate (OSHA)	0.07	0.1	0.04
403	Occupational Health and Safety	Days Away, Restricted, and Transfer (DART) rate (OSHA)	0.22	0.17	0.11
403	Occupational Health and Safety	Serious Injury Incident Rate (SIIR)	0.07 ¹	0.03	0.03
403	Occupational Health and Safety	Work-related Fatalities	0	0	0
404	Training and Education	Training for Career Advancement (hours/employee)	73.7	64.02	68.65

Category	Topic	Key Performance Metric Name	FY 2019	FY 2020	FY 2021
404	Training and Education	Continuing Education Contributions (\$)	443,789.0	567,714.8	436,764.2
405	Diversity and Equal Opportunity	Military Share of Workforce (%)	18.1%	18.1%	17.9%
405	Diversity and Equal Opportunity	Minority People of Color Share of Workforce (%)	11.8%	11.0%	11.24%
405	Diversity and Equal Opportunity	Women Share of Workforce (%)	20.1%	20.1%	20.37%
411	Rights of Indigenous Peoples	Tribal Engagement	51	36	57
413	Local Communities	Environmental & Community Engagement (# Group activities)	805	307	264
413	Local Communities	Environmental & Community Engagement (# Children participating)	10,325	2615	26,777
413	Local Communities	Annual Tax Equivalent Payments (without FCA) (\$M)	541	528	514
413	Local Communities	Back-to-Business Credit Program (\$)	New for 2020	9,887,500	3,219,298
413	Local Communities	Community Care Fund (\$)	New for 2020	2,563,651	1,771,177
413	Local Communities	Employee Hours Volunteered (Hours)	2550	4400	2,638
413	Local Communities	Stakeholder Survey (%) ⁴	80.0%	78.2%	78.3%
413	Local Communities	Customer Loyalty (%) (VOC Survey Results) ⁴	71.3%	70.7%	70.3%
413	Local Communities	Media Tone (%) (Positive and Neutral) ⁴	89.3%	85.3%	85.7%
414	Supplier Social Assessment	Sustainable Acquisition Progress – Obligations in Dollars containing Statutory Environmental Requirements (% of contract dollars with environmental clauses)	93.7%	89.3%	96.7%

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 2019 value includes historical emissions that were not previously captured.

⁷ Caledonia Combined Cycle Plant is currently a leased facility operated by TVA.

⁸ See Appendix E for Reconciliation G.

⁹ Construction Expenditures based on Statement Cash Flows.

¹⁰ Beginning in 2021, Raccoon Mountain Pumped-Storage Plant net generation is allocated against each TVA-operated generation facility and purchased power type.

Appendix B – SASB Disclosure Initiatives

Code	Topic	Metric	FY 2021
IF-EU-110a.1	Greenhouse Gas Emissions & Energy Resource Planning	(1) Gross global Scope 1 emissions (Metric Tons)	40,614,364
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)	45,630,413
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 57% reduction in mass carbon emissions since 2005 (system emissions include owned and purchased power). We have a path to achieve an approximate 80% reduction by 2035 and we aspire to achieve net-zero carbon emissions by 2050. For more information please visit tva.com/carbon .
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 9000 customers in North Carolina, which is the only state in our 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 (Metric Tons)	15,210
IF-EU-120a.2	Air Quality	(2) SO _x (Metric Tons)	25,226
IF-EU-120a.5	Air Quality	(5) Mercury (Hg) (Metric Tons)	0.02626
IF-EU-140a.1	Water Management	(1) Total water withdrawn (Thousand cubic meters)	14,702,614
IF-EU-140a.1	Water Management	(2) Total water consumed (Thousand cubic meters)	112,537
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	Water Management Discussion can be found in our Climate Adaptation Plan and Sustainability Report .

Code	Topic	Metric	FY 2021
IF-EU-150a.1	Coal Ash Management	(1) Amount of coal combustion residuals (CCR) generated (Metric Tons)	1,857,560 (tons)
IF-EU-150a.1	Coal Ash Management	(2) Percentage recycled	59%
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 Compliance Information CCR Fact Sheet
IF-EU-240a.1	Energy Affordability	Average retail electric rate for residential customers	11.12 cents/kWh
IF-EU-240a.1	Energy Affordability	Average retail electric rate for commercial customers	10.74 cents/kWh
IF-EU-240a.1	Energy Affordability	Average retail electric rate for industrial customers	4.91 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	fy21-tva-annual-report9f6def97-db46-4981-ad0c-1b2d76724b44.pdf Connected Communities (tva.com) TVA, MLGW & Partners Celebrate 500th Home Uplift Milestone Uplifting Lives (tva.com) TVA Agency Equity Action Plan (EO 13985) 2022 (azureedge.net)
IF-EU-320a.1	Workforce Health & Safety	(1) Total recordable incident rate (TRIR)	0.24
IF-EU-320a.1	Workforce Health & Safety	(2) Fatality rate	0
IF-EU-420a.3	End-Use Efficiency & Demand	Customer electricity savings from efficiency measures, by market (MWh)	19,777
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 7 nuclear power units at 3 sites; all 7 units are in the Licensee Response Column of the NRC Action Matrix.

Code	Topic	Metric	FY 2021
IF-EU-540a.2	Nuclear Safety & Emergency Management	Description of efforts to manage nuclear safety and emergency preparedness	TVA's nuclear plants have multiple safety systems in place to keep our workforce and the communities we serve safe. Safety systems include physical barriers that protect against radiation release and layer upon layer of redundant and diverse back-up power systems to keep reactors sufficiently cooled—even in extreme or unlikely events. Our plants operate with oversight by the U.S. NRC, which has inspectors physically stationed at each site. After the event at Fukushima in Japan, the NRC required all nuclear plants to install additional backup safety equipment, known as FLEX, to protect plants from even more extreme events, including “stacked” events during which one disaster follows another. TVA also utilizes industry resources, like the national response centers in Memphis, Tennessee, and Phoenix, Arizona, which were opened in 2014 and can deliver additional safety equipment and resources to any U.S. nuclear power plant within 24 hours. TVA Nuclear regularly reviews nuclear successes and setbacks across the globe, and we use that knowledge to update our equipment, procedures and training to the highest standards.
IF-EU-550a.1	Grid Resiliency	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	10

Appendix C – Disclosure Initiatives

As a federal agency, TVA submits plan and reports annually to support the goals of Executive Orders including 14008 and 13834, the Energy and Policy Act of 2005, the National Energy Conservation Policy Act of 1978 and the Energy Independence and Security Act of 2007.

TVA also engages in the industry, federal and customer-oriented disclosure initiatives.

Edison Electric Institute - Environmental, Social, and Governance (ESG) Reporting Template - TVA participates in the Edison Electric Institute (EEI) and American Gas Association (AGA) environmental, social and governance (ESG) reporting template initiative. This initiative includes a stakeholder working group composed of electric companies and financial industry specialists in asset management, sustainability, investment banking, and buy-side and sell-side analysts to develop industry-focused and investor-driven sustainability reporting practices. The effort encourages voluntary reporting of sustainability information in both quantitative and qualitative formats and is the first and only industry-focused and investor-driven ESG reporting framework. The EEI ESG report template provides information in a measurable and consistent format for investors and customers to accurately assess long-term sustainability progress. TVA's 2020 EEI ESG Template is available online at [EEI ESG](#).

Freedom of Information Act (FOIA) Requests - As a federal agency, TVA is required under the Freedom of Information Act (FOIA) to disclose records that any person requests in writing, with the exception of 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 about TVA and the FOIA at [Freedom of Information Act](#).

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 disclose 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 or read more about GRI at [GlobalReporting.org](#).

Office of Management and Budget Scorecard and Plans - Executive Order (EO) 13834, "Efficient Federal Operations," states that the OMB and the Council on Environmental Quality will coordinate scorecard metrics and reporting instructions to measure agency progress. TVA's Federal Sustainability Report and Implementation Plan addresses key aspects of our federal objectives and targets. We integrate our federal goals into our existing business operations, align with specific federal goals and metrics, and report on our progress. The Executive Order does not include the parts of TVA that directly produce electricity for resale. The Sustainability Report and Implementation Plan (along with an Annual Energy Management Report) are updated annually to report progress on the EO 13834 goals. Learn more about TVA's [Annual Federal Sustainability Plans](#).

Sustainability Accounting Standards Board (SASB) - To complement the GRI standards, TVA has incorporated the SASB metrics into sustainability reporting. The SASB standards are intended to increase accessibility to the sustainability information most significant to the financial community. The addition of this framework enables communication to investors about how sustainability issues impact long-term enterprise value. Read more about SASB at: [SASB.org](#).

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. TVA also releases a supplementary Annual Report in support of the 10-K to provide highlighted information of interest about TVA's business and operations during the fiscal year. Access current and historical TVA SEC filings at: [SEC Filings](#).

Task Force on Climate-Related Financial Disclosures (TCFD) - The TCFD is an organization formed by the Financial Stability Board (FSB) with the goal of developing a set of voluntary climate-related financial risk disclosures to inform investors, lenders and insurance underwriters as well as other members of the public about the risk companies face related to climate change. TCFD's efforts are ongoing, and TVA continues to monitor, evaluate and incorporate TCFD recommendations into its public disclosure documents. Read more about the TCFD online at [Task Force on Climate-related Financial Disclosures](#).

Information on TVA's actions or activities that are of wide interest to the public is made available through multiple additional channels, such as the TVA website, public meetings, stakeholder advisory panels, community action groups, press releases and advisories, among other methods.

Appendix D – Guidance Documents

Carbon Report - TVA's Carbon Report outlines our commitment and path to reduce carbon in the coming years without compromising reliability and low rates. The report outlines TVA's leadership in carbon reduction, our plan to achieve 70% reduction by 2030, our path to ~80% reduction by 2035 and our aspiration to achieve net-zero carbon by 2050. It provides a framework for TVA's decarbonization strategy through innovation in energy technology, energy delivery, natural resource stewardship, the TVA fleet, and the Tennessee Valley. Read more about TVA's Carbon Report at: [Carbon Report](#).

Climate Action Adaptation and Resiliency Plan - TVA maintains our Climate Action Adaptation and Resiliency Plan as a cohesive part of our major planning processes in accordance with Executive Order 14008: Tackling the Climate Crisis at Home and Abroad. Climate change adaptation planning allows TVA to identify possible impacts to mission achievement, assess potential consequences and ability to mitigate climate change, develop adaptation planning actions, ensure resources are invested wisely and support the federal government's leadership role in sustainability. TVA's 2021 Climate Action Adaptation and Resiliency Plan is available online at: [Climate Action Adaptation and Resiliency Plan](#).

Code of Conduct - The TVA Code of Conduct is intended to inspire, guide and enable the best performance of our employees, leadership, and the organization as a whole. It promotes ethical decision-making and conduct by helping us identify and navigate potentially challenging situations. By setting standards and by guiding us in line with TVA's values, the Code helps us to build a strong ethical culture and to achieve our business goals with integrity. Read more about TVA's Code of Conduct at [Code of Conduct](#).

Environmental Policy - This synergistic and forward-thinking Board Policy lays forth TVA's plan for environmental stewardship and compliance, technology innovation and a growing renewable energy portfolio. The goal is to provide cleaner, reliable and affordable energy to support sustainable growth in the Tennessee Valley and to engage in environmental stewardship in a balanced and ecologically sound manner. Read more about TVA's Environmental Policy online at: [Environmental Policy](#).

Biodiversity Policy - In support of the Environmental Policy, TVA adopted the Biodiversity Policy in September 2021. This guiding Policy is a commitment to 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 about TVA's Biodiversity Policy online at: [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 twenty 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 about TVA's Integrated Resource Plan online at: [TVA's Integrated Resource Plan](#).

National Environmental Policy Act (NEPA) - As a federal agency, TVA complies with the National Environmental Policy Act. NEPA establishes the process of identifying, considering and disclosing the environmental impacts of major federal actions. The NEPA process helps guide agency officials to make decisions that protect, restore and enhance the human environment. TVA's NEPA procedures outline how TVA conducts these environmental reviews. Read more about TVA's NEPA procedures online at: [NEPA at TVA](#).

Natural Resource Plan (NRP) - TVA is unique among power generators in that it was created to enhance the economic aspects of its service region, and to fulfill the responsibilities associated with being a good steward of the lands and resources that are entrusted to TVA. The NRP is a strategic level document that, over the next 20 years, will guide the direction of TVA's natural resource stewardship. The NRP creates a sound framework for balancing land use, human activity and conservation. As always, the goal is to find the optimal public benefit of each action TVA takes. Read more about the Natural Resource Plan online at: [TVA's Natural Resource Plan](#).

Strategic Intent and Guiding Principles - This document outlines the TVA leadership team's intent to align its people, operational and innovation efforts to business strategies that provide reliable, resilient, low-cost, and clean energy to the region. Focused on energy supply and decarbonization initiatives, the Strategic Intent document provides a framework for responsible decarbonization strategies and establishes a series of milestones on TVA's path to net zero by 2050. Read more about the Strategic Intent document online at: [TVA Strategic Intent and Guiding Principles](#).

Appendix E – Reconciliation G

	September 30, 2019	September 30, 2020	SEPTEMBER 30, 2021
Total outstanding debt	\$22,197	\$20,889	\$20,314
Exchange gain	191	153	58
Unamortized discounts, premiums, issue costs and other	139	131	122
Notes payable	(23)	-	-
Debt of variable interest entities	(1,137)	(1,098)	(1,056)
Bonds and Notes, Gross	\$21,367	\$20,075	\$19,438
Notes payable	23	-	-
Leaseback obligations	263	223	25
Membership interests of variable interest entity subject to mandatory redemption	28	25	24
Debt of variable interest entities	1,137	1,098	1,056
Total Debt and Other Financing Obligations, Gross ("TFO")	\$22,818	\$21,421	\$20,543
Cash and Cash Equivalents	(299)	(500)	(499)
Total Debt and Other Financing Obligations, Gross ("TFO"), net of Cash and Cash Equivalents	\$22,519	\$20,921	\$20,044

*Note numbers may be adjusted for rounding.

Appendix F - TVA Alignment with Disclosure Framework Criteria

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Economic	Environment	Social	Governance	Section Title	Page	Supporting information
Global Reporting Initiative (GRI) Criteria								
101	Foundation				✓	Introduction	10-11	Sustainability
102	General Disclosures				✓	Introduction	8-9	TVA at a Glance The TVA Act
103	Management Approach				✓	Introduction	10-11	Reports Sustainability
201	Economic Performance	✓				Governance	31, 63, 65	For Investors SEC Filings
202	Market Presence			✓		Economic Impact	31-34	Public Power Partnerships
203	Indirect Economic Impacts	✓				Economic Impact	34-35	The Valley Works Flood Damage Reduction Community Relations
204	Procurement Practices	✓				Economic Impact	31, 35	Build a Relationship with TVA Supplier Code of Conduct
205	Anti-Corruption				✓	Governance	64-66	TVA Code of Conduct TVA Executive Code of Conduct Political Activity Policy
206	Anti-Competitive Behavior	✓			✓	Governance	64-66	TVA Code of Conduct TVA Executive Code of Conduct
301	Materials	✓	✓			Economic Impact	35, 45	Green Procurement TVA Recycles CCR
302	Energy		✓			Aspiring to Achieve Net-Zero	20-21	TVA OMB Scorecard Federal Sustainability Plans and Performance
303	Water and Effluents		✓			Environment	40	Managing the River River Recycled Water Quality
304	Biodiversity		✓			Environment	41-43	Biodiversity Policy Land Management
305	Emissions		✓			Aspiring to Achieve Net Zero, Environment	36, 39	Carbon Reduction

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Economic	Environment	Social	Governance	Section Title	Page	Supporting information
306	Waste and Effluents		✓			Environment	45	Coal Ash
307	Environmental Compliance		✓			Environment	37, 39-40, 44-45	Environmental Reviews
308	Supplier Environmental Assessment		✓	✓		Economic Impact	31, 35	Green Procurement Supplier Code of Conduct
401	Employment			✓	✓	Social	58-60	Benefits and Quality of Life 10-K: Human Capital Management
402	Labor/Management Relations			✓		Social	60	TVA Executive Code of Conduct
403	Occupational Health and Safety			✓		Social	60	TVA SPP-18.000: Safety TVA Code of Conduct
404	Training and Education			✓		Social	59-60	Benefits and Quality of Life 10-K: Development and Training
405	Diversity and Equal Opportunity			✓	✓	Social	59	Diversity Policy Equal Opportunity Employment Policy TVA Executive Code of Conduct
406	Non-Discrimination			✓	✓	Social	59	No Fear Act FY21 Data Discrimination Complaints Process Policy
407	Freedom of Association and Collective Bargaining			✓	✓	Social	60	FY20 Annual Report: Union Partnerships Labor Documents for Trades and Labor Work
408	Child Labor			✓		Governance	66	Labor Documents for Trades and Labor Work
409	Forced or Compulsory Labor			✓		Social	59, 66	Labor Documents for Trades and Labor Work
410	Security Practices			✓		Governance	66-67	TVA Police Federal Information Security Modernization OIG Report
411	Rights of Indigenous Peoples			✓		Environment	44	Cultural Resource Management
412	Human Rights Assessment		✓	✓		Governance	66	TVA Code of Conduct
413	Local Communities			✓		Social	56-58	Community Relations Community Support and Assistance

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Economic	Environment	Social	Governance	Section Title	Page	Supporting information
414	Supplier Social Assessment	✓		✓		Economic Impact	31, 35	Supplier Code of Conduct Supplier Diversity
415	Public Policy	✓			✓	Governance	64-66	Political Activity TVA Code of Conduct Tax Equivalent Payments FY2021
416	Customer Health and Safety			✓		Social	49	TVA Dam Safety Transmission Line Safety Commitment to Nuclear Safety
417	Marketing and Labeling	✓				Governance	66	TVA Code of Conduct
418	Customer Privacy			✓		Governance	66-67	TVA Privacy Policy
419	Socioeconomic Compliance	✓		✓	✓	Governance	64-66	TVA Annual Report on Form 10-K
Sustainability Accounting Standards Board (SASB) Criteria								
IF-EU-110a	Greenhouse Gas Emissions & Energy Resource Planning	✓	✓		✓	Aspiring to Achieve Net-Zero	16-21	Strategic Intent and Guiding Principles Carbon Report Integrated Resource Plan
IF-EU-120a	Air Quality		✓			Environment	39	Air Quality
IF-EU-140a	Water Management		✓	✓		Environment	40	Managing the River River Recycled Water Quality
IF-EU-150a	Coal Ash Management		✓	✓		Environment	45	Coal Ash
IF-EU-240a	Energy Affordability	✓		✓		Aspiring to Achieve Net-Zero	13, 16	TVA Rates Strength and Stability
IF-EU-320a	Workforce Health and Safety			✓		Social	60	TVA SPP-18.000: Safety TVA Code of Conduct
IF-EU-420a	End-Use Efficiency & Demand	✓		✓		Social	56-58	EnergyRight® Home Uplift School Uplift
IF-EU-540a	Nuclear Safety & Emergency Management			✓	✓	Social	49	Nuclear Safety Emergency Preparedness
IF-EU-550a	Grid Resiliency	✓		✓		Aspiring to Achieve Net-Zero	16-21, 66-67	Grid of Tomorrow Approaches to Resilience at TVA

Standard Information		Sustainability Pillar				Sustainability Report		TVA.com
Standard Code	Criteria Description	Economic	Environment	Social	Governance	Section Title	Page	Supporting information
United Nations Sustainable Development Goals (UN SDGs)								
7	Affordable and Clean Energy	✓			✓	Aspiring to Achieve Net-Zero, Social	16-21, 56-58	Valley Renewable Energy Integrated Resource Plan Carbon Report Strategic Intent and Guiding Principles
8	Decent Work and Economic Growth	✓		✓	✓	Economic Impact, Social	32-33, 58-60	The Valley Works The Strength of TVA is its People TVA Sites Community Centered Growth
9	Industry, Innovation, and Infrastructure	✓			✓	Aspiring to Achieve Net-Zero, Social	18-21, 56-58	Energy System of the Future Connected Communities Strategic Intent and Guiding Principles Broadband Solutions
10	Reduced Inequalities			✓	✓	Social	35, 56-59	DEIA Report Diversity Policy Supplier Diversity
11	Sustainable Cities and Communities	✓		✓		Aspiring to Net-Zero, Economic Impact, Environment	28, 34, 44	Connected Communities Flood Damage Reduction Cultural Resource Management
13	Climate Action	✓	✓		✓	Economic Impact, Environment	38, 22-25	Climate Action Adaptation and Resiliency Plan Carbon Report
15	Life on Land		✓	✓		Environment	40-43	Stewardship 2022 Environmental Policy Biodiversity Policy

Note: ✓ = primary emphasis ✓ = secondary emphasis

Appendix G - Acronym List

AEMR - Annual Energy Management Report	IwD - Inclusion with Diversity
CCA - Candidate Conservation Agreement	LPC - Local Power Company
CCG - Community Centered Growth	MW - Megawatts
CCR - Coal combustion residuals	NC - North Carolina
CCUS - Carbon Capture, Utilization and Storage	NEPA - National Environmental Policy Act
CEO - Chief Executive Officer	NERC - North American Electric Reliability Corporation
CISA - Cybersecurity and Infrastructure Security Agency	NGO - Non-Governmental Organization
CO - Carbon Monoxide	NO_x - Nitrogen Oxide
CO₂ - Carbon Dioxide	NRC - Nuclear Regulatory Commission
COE - Code of Excellence	OIG - Office of the Inspector General
COVID - Coronavirus	OMB - Office of Management and Budget
CSO - Chief Sustainability Officer	PCB - Polychlorinated biphenyl
CT - Combustion Turbines	RERC - Regional Energy Resource Council
CY - Calendar Year	ROW - Right of Way
DER - Distributed Energy Resources	RRSC - Regional Resource Stewardship Council
DOE - Department of Energy	SASB - Sustainability Accounting Standards Board
EEI - Edison Electric Institution	SBU - Strategic Business Unit
EO - Executive Order	SDG - Sustainable Development Goals
EPRI - Electric Power Research Institute	SEC - Securities Exchange Commission
ERC - Enterprise Risk Council	SMR - Small Modular Reactor
ERG - Employee Resource Group	SO₂ - Sulfur Dioxide
ESG - Environmental, Social, and Governance	SOC - System Operations Center
EV - Electric Vehicle	SOX - Sarbanes-Oxley Act
FY - Fiscal Year	SR&IP - Sustainability Report and Implementation Plan
GAO - Government Accountability Office	STEM - Science, Technology, Engineering and Mathematics
GHG - Greenhouse Gas	TDEC - Tennessee Department of Environment and Conservation
GRI - Global Reporting Initiative	TVA - Tennessee Valley Authority
HVAC - Heating, Ventilation and Air Conditioning	
ICLEI - Local Governments for Sustainability	



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