

# Agenda

## Member Representatives Committee Informational Session

November 13, 2024 | 12:30 p.m. – 1:00 p.m. Eastern

Attendee WebEx: [Click to Register and Join](#)

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### Introduction and Chair's Remarks

### [NERC Antitrust Compliance Guidelines and Public Announcement](#)

### Agenda Items

1. Overview of NERC Membership Sectors\*
  - a. Sector 4: Federal/Provincial Utility\*

## Overview of NERC Membership Sectors

### Action

Information

### Summary

At the April 2024 MRC Informational Session, the MRC initiated an educational series for [MRC members](#) to present on NERC's membership sectors<sup>1</sup> that are represented on the MRC, including how each sector is organized and who they represent.

During the November 13, 2024, MRC informational session, the educational series will continue with presentations on the following Sectors:

- Sector 4: Federal/Provincial Utility

The presentations from the April and July sessions were recorded and posted on [NERC's YouTube channel](#). Following the November session, the presentation on the above sector will be added to the channel.

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<sup>1</sup> NERC Membership is organized by 13 sectors (sectors 1 through 10, and sector 12 have voting representation on the MRC). MRC members are elected by NERC members. [Membership in NERC](#) is free, voluntary, and open to any person or entity with an interest in the reliable operation of the North American bulk power system.

# SECTOR 4 FEDERAL/PROVINCIAL UTILITY

NERC MRC MEETING

NOVEMBER 13, 2024

EDISON ELIZEH, DARYL MAXWELL, STÉPHANE  
DESBIENS

# AGENDA

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- Who does Sector 4 represent?
- Mapping Sector 4's footprint
- Key numbers and context
- Trade organization participation
- How sector 4 convenes
- Top issues and risks

# WHO DOES SECTOR 4 REPRESENT?

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Sector 4 is made up of government-owned electric utilities in Canada and the United States that own and/or operate electric facilities in any of the asset categories of generation, transmission, or distribution; or function as a power marketer or power marketing administrator.

In the U.S., Sector 4 entities are part of government agencies at the Federal level.

## SECTOR 4 IN CANADA

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- In Canada, Sector 4 entities are, with few exceptions, provincial Crown Corporations (fully owned by provincial governments).
- These Crown Corporations are often the primary providers of balancing, generation, transmission, and/or distribution services for their provinces.
- Under Canada's constitution, provinces have jurisdiction over energy matters. Electric markets don't extend beyond provincial boundaries – sales are approved or made by the province (or through the provincial system operator, if there is a competitive market).

# SECTOR 4 ENTITIES (U.S.) – EDISON ELIZEH

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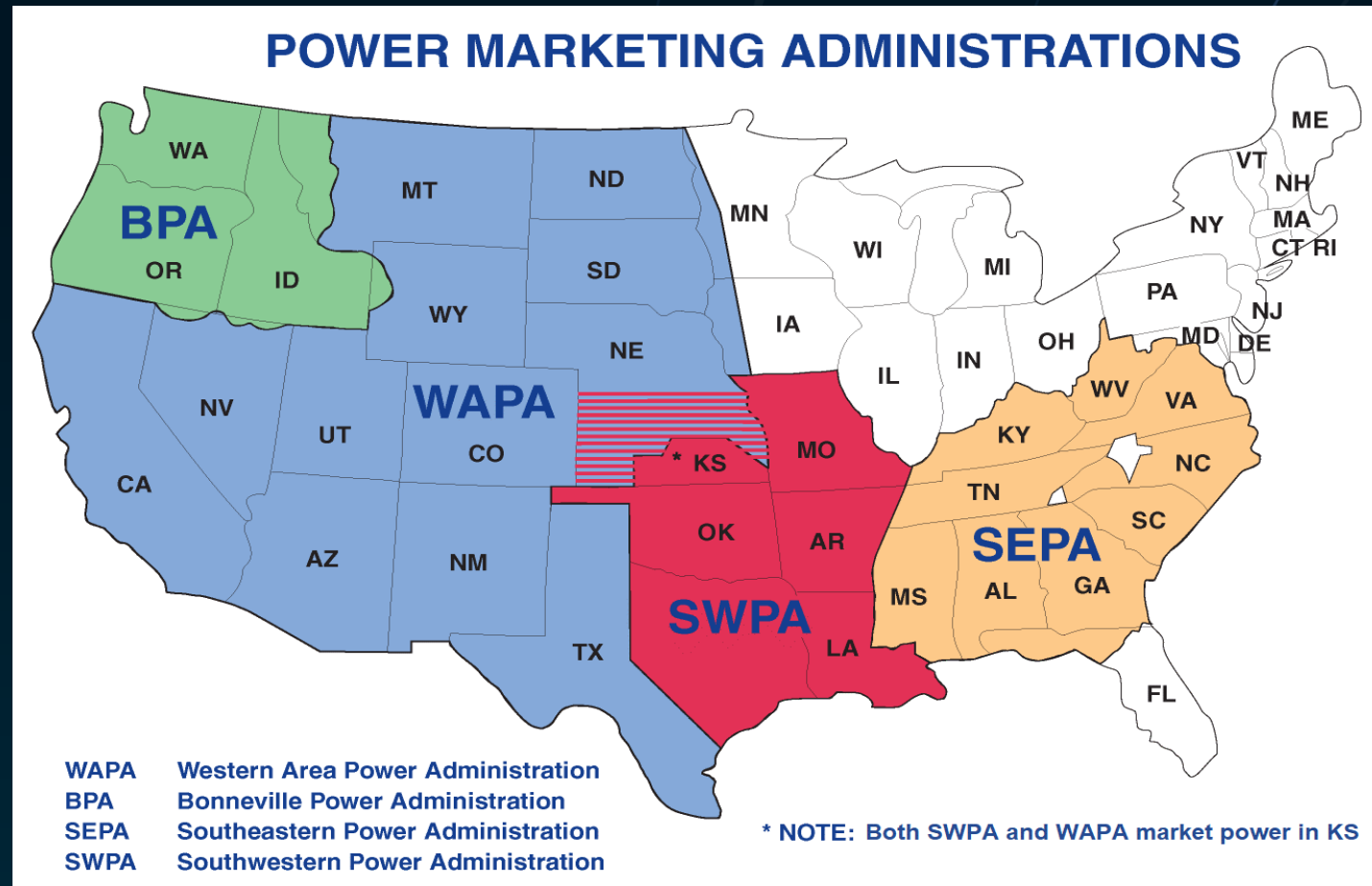
- Four Federal Power Marketing Administrations (PMAs) exist under the US Department of Energy (DOE):

1. Bonneville Power Administration (BPA)
2. Western Area Power Administration (WAPA)
3. Southeastern Power Administration (SEPA)
4. Southwestern Power Administration (SWPA)

They operate electric systems and sell the electrical output of federally owned and operated hydroelectric dams in 34 states. The resource portfolios of PMAs does include nuclear, fossil fuel and renewable generation as well.

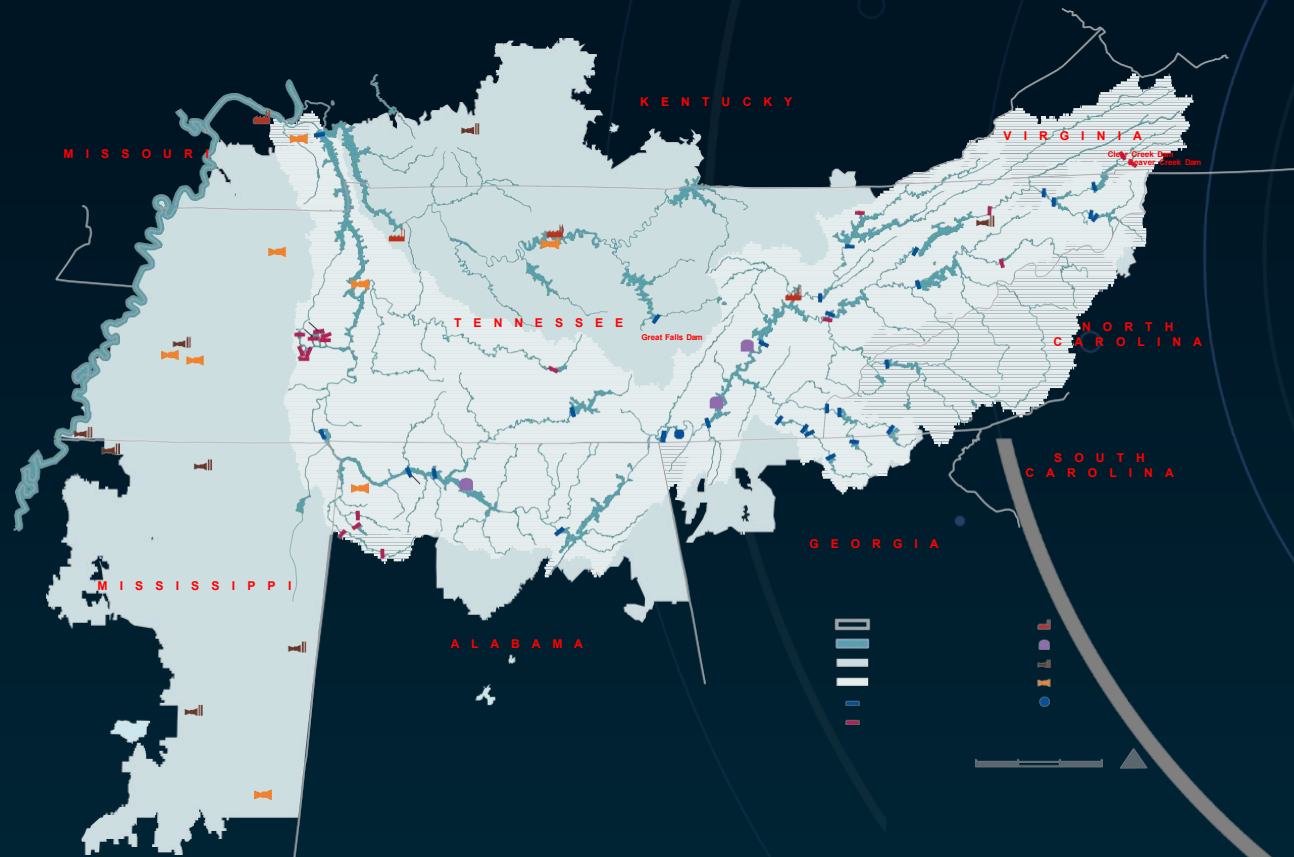
- The Tennessee Valley Authority (TVA) is a federally owned electric utility corporation. TVA owns and operates a variety of generation transmission facilities in 7 states.

# SECTOR 4 IN THE U.S.: PMAS GEOGRAPHICAL TERRITORIES



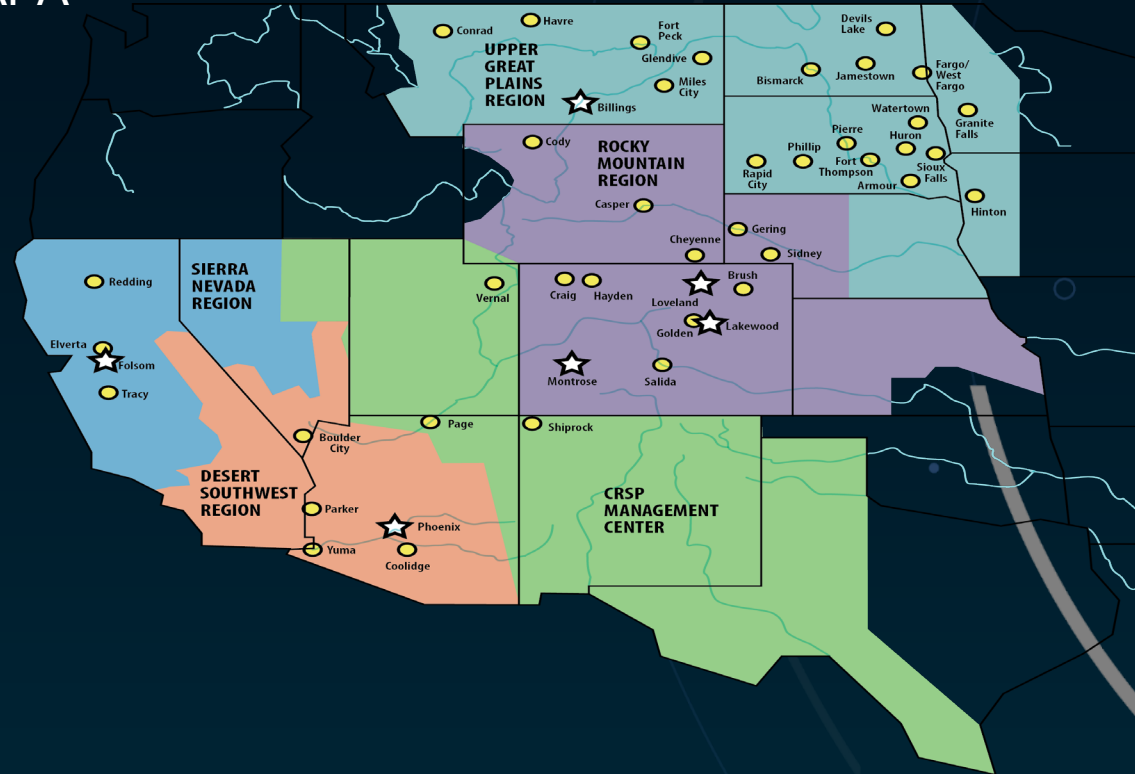


# SECTOR 4 IN THE U.S.: TVA GEOGRAPHICAL TERRITORY



# SECTOR 4 IN THE U.S.: WAPA'S REGIONAL DISTRICTS

WAPA



# SECTOR 4 IN THE U.S.:

## KEY NUMBERS

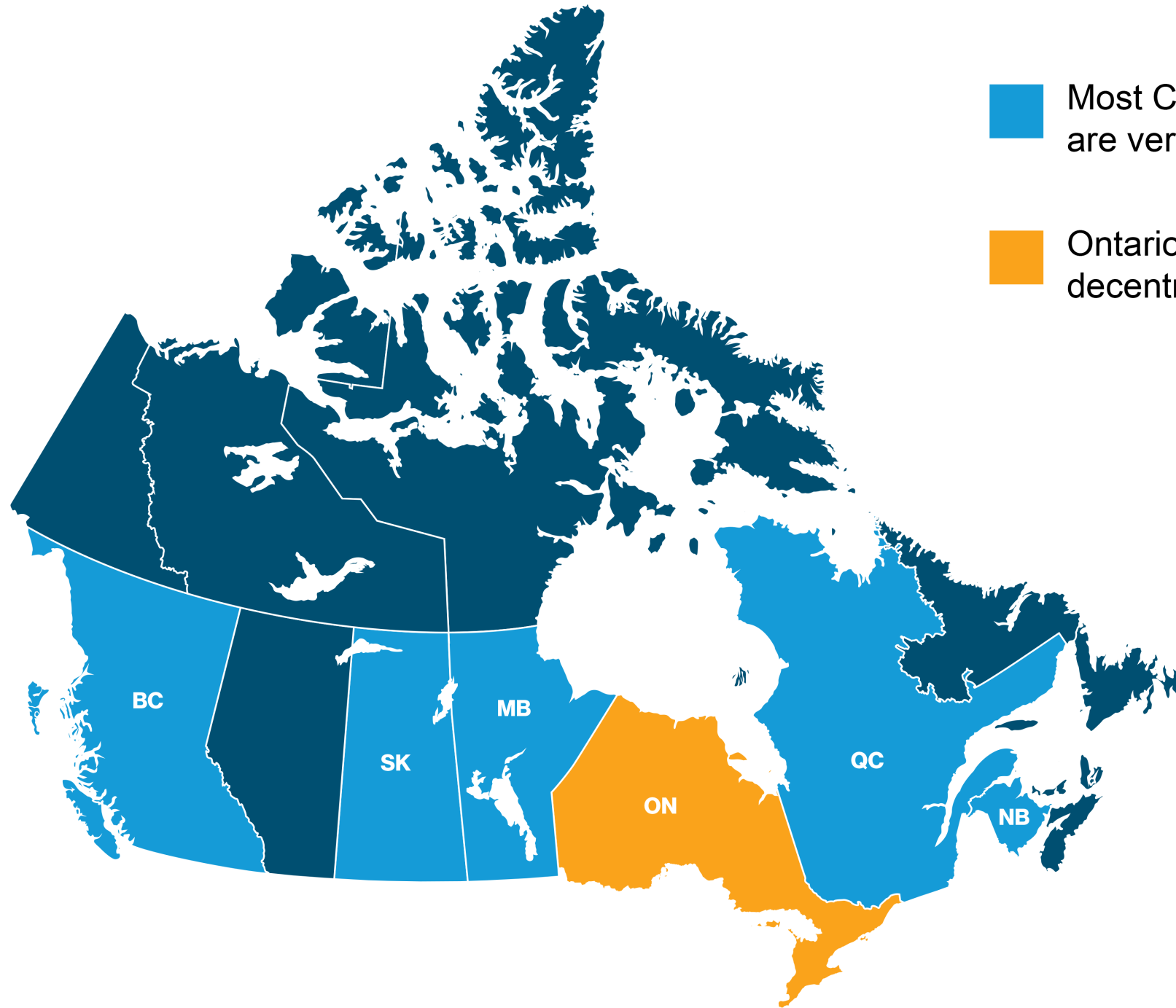
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- US PMAs & TVA
  - I. BPA – Generation Capacity 22,379MW, Transmission Lines over 15,000 Miles, 142 Load Serving Entities, Employees 2,928
  - II. WAPA – Generation Capacity 10,035MW, 687 Load Serving Entities , Transmission Lines over 17,000 Miles, Employees 1,500+
  - III. SEPA – Generation Capacity 3,365MW, 472 Load Serving Entities , Transmission Lines 0 Miles, Employees ~44
  - IV. SWPA – Generation Capacity 2,214MW, 113 Load Serving Entities, Transmission Lines 1,380 Miles, Employees ~200
  - V. TVA – Generation Capacity 32,139MW, 153 Load Serving Entities, Transmission Lines over 16,000 Miles, Employees 10,485

# SECTOR 4 ENTITIES (CANADA) – DARYL MAXWELL & STÉPHANE DESBIENS

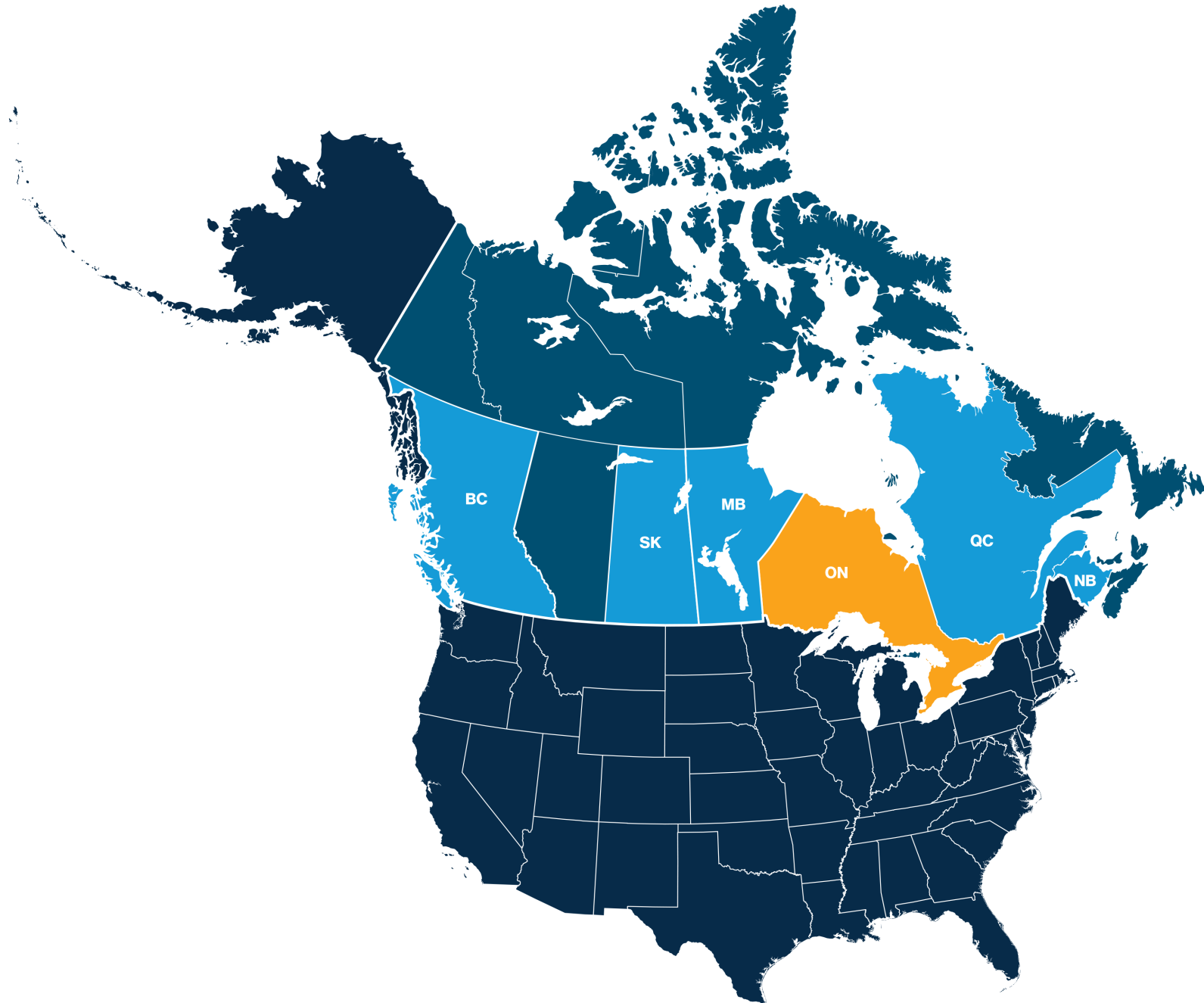
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- BC Hydro and Power Authority
- SaskPower
- Manitoba Hydro
- Ontario Power Generation Inc.
- Hydro One Networks, Inc.
- Hydro-Quebec
- New Brunswick Power Corporation



 Most Crown Corporations are vertically integrated

 Ontario has a hybrid decentralized market



# SECTOR 4 IN CANADA: FUNCTIONS

	Generation	Transmission	Distribution	Power Marketing
BC Hydro and Power Authority	✓	✓	✓	✓
SaskPower	✓	✓	✓	✓
Manitoba Hydro	✓	✓	✓	✓
Ontario Power Generation Inc.	✓	x	x	✓
Hydro One Networks, Inc.	x	✓	✓	x
Hydro-Quebec	✓	✓	✓	✓
New Brunswick Power Corporation	✓	✓	✓	✓

*It's reasonable to assume most Canadian Sector 4 entities provide >90% of generation, transmission, and distribution services for their provinces*

# SECTOR 4 IN CANADA: KEY NUMBERS

	Generation Capacity	Transmission Circuit Length (km)*	# of Customers	Population
<b>BC Hydro and Power Authority</b>	12,049 MW	18,286	2,198,388	5,698,430
<b>SaskPower</b>	5,355 MW	14,727	548,718	1,239,865
<b>Manitoba Hydro</b>	5,690 MW	18,500	621,116	1,494,301
<b>Ontario Power Generation Inc.</b>	18,150 MW	-----	-----	16,124,116
<b>Hydro One Networks, Inc.</b>	-----	27,606	1,467,684 + 60 LDCs**	16,124,116
<b>Hydro-Quebec</b>	37,200 MW	41,475	4,546,190	9,056,044
<b>New Brunswick Power Corporation</b>	4,723 MW	6,901	373,300	854,355

\*1000 km = 621 miles

\*\*Local distribution companies



## TRADE ORGANIZATIONS (U.S.)

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US Sector 4 entities cannot be members of trade organizations like EEI or APPA.

However, they do participate in groups such as Reserve Sharing, North American Transmission Forum (NATF), Western Interconnection Compliance Forum (WICF), and other related organizations as service providers (not as a lobbyists).

# TRADE ORGANIZATIONS (CANADA)

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All Canadian Sector 4 entities are members of Electricity Canada.

Electricity Canada is the primary trade association for the Canadian electricity industry. Electricity Canada membership is not specific to a grid function, business model, or generation resources. One of Canada's two independent system operators (IESO – Sector 10) is also a member of this trade association.

## HOW SECTOR 4 CONVENES

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The PMAs and TVA have designated primary contacts who work with the Sector 4 US member to share concerns and information. This is typically done leading up to and following NERC Board & MRC meetings.

The Canadian Sector 4 perspectives are identified and coordinated through Electricity Canada's Electric Regulatory Advisory Committee. This Committee's area of interest is regulatory matters (including NERC) and the membership includes representatives from most Sector 4 entities. It meets monthly.

Typically, policy input is submitted separately by the U.S. MRC representative and Electricity Canada. However, both countries work together to share proposed comments and positions to support alignment where possible.

# TOP ISSUES AND RISKS

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- Extreme weather including hurricanes, wildfires, cold snaps, prolonged drought and heat waves
- Large loads like data centers, storage and crypto load and assurance on energy production and delivery
- Artificial intelligence in physical and cyber security
- Energy policy alignment among states & federal on load connection and emerging markets (more pronounced in the U.S., but exists in Canada as well)
- Affordability and rate regulation
- Buildout to meet growing electrification load and population growth
- Integration of distributed and variable energy resources (DERs/VERs)

**QUESTIONS?**

# APPENDIX

# SECTOR 4 MEMBER WEBSITES – UNITED STATES

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[Bonneville Power Administration](#)

[Southeastern Power Administration | Department of Energy](#)

[Southwestern Power Administration | Department of Energy](#)

[Tennessee Valley Authority](#)

[Western Area Power Administration](#)

# SECTOR 4 MEMBER WEBSITES – CANADA

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[BC Hydro and Power Authority](#)

[SaskPower](#)

[Manitoba Hydro](#)

[Ontario Power Generation Inc.](#)

[Hydro One Networks, Inc.](#)

[Hydro-Quebec](#)

[New Brunswick Power Corporation](#)





## Energy & services

BPA is a nonprofit federal power marketing administration based in the Pacific Northwest. BPA dedicates itself to providing high system reliability, low rates consistent with sound business principles, environmental stewardship and accountability.



### Power Services

BPA markets and sells electrical power to its customers in the Northwest. Because BPA sells nearly carbon-free power at cost, our customers enjoy low rates and cleaner energy.

See BPA's power contracts and products, view current power rates, get information on how to become a power customer and more.



### Transmission Services

BPA is committed to providing safe, reliable and low-cost transmission services to the Pacific Northwest, operating and maintaining more than 15,000 circuit miles of high-voltage transmission in its service territory.

See BPA's current transmission rates, get information on how to become a transmission customer and more.



### Energy Efficiency

Advancing innovative energy-saving solutions, BPA's Energy Efficiency group works with utility customers to establish a regional energy efficiency goal, reduce energy use and cut costs.

See available Energy Efficiency programs, contract guidelines and marketing materials and more.



### Rate & tariff proceedings

BPA is a federal power marketing administration that receives no congressional appropriations and must recover its costs through its rates.

See current and historical rates and learn more about the rate-making process.

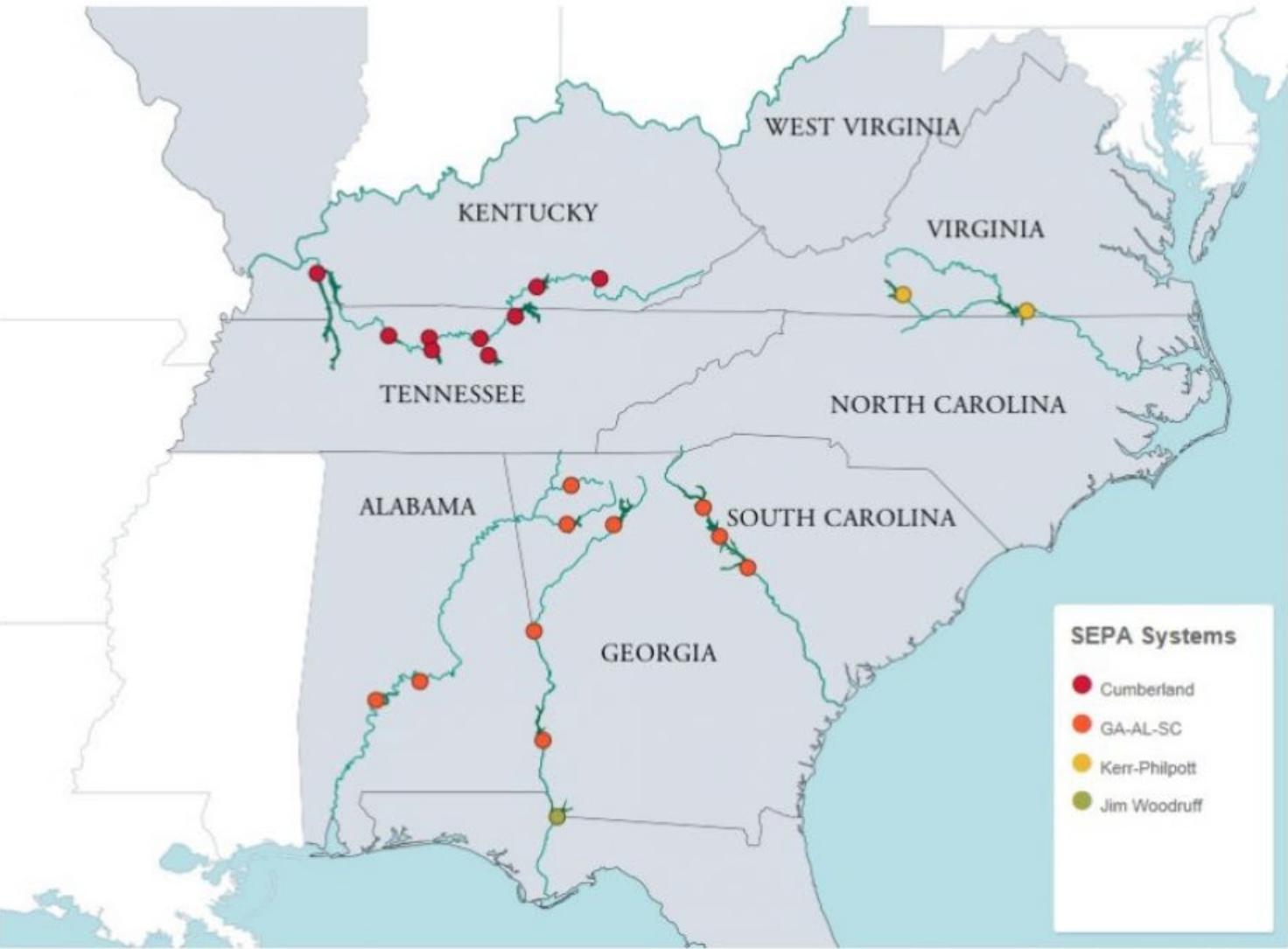


### Customer & contractor services

BPA provides information dedicated to helping customers, contractors and vendors conduct business transactions with BPA.

See information on buying and selling products or services and the associated policies and procedures.

# Southeastern Power Administration



**Number of Employees:** .....44

**Marketing Area:**

Alabama, Florida, Georgia, Illinois, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia

**Customers:**

Electric Cooperatives .....	191
Public Bodies .....	280
Investor-Owned Utilities.....	1
<b>Total.....</b>	<b>472</b>

# About SWPA

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- An agency of the U.S. Department of Energy.
- One of four Power Marketing Administrations.
- Operates under the authority of Section 5 of the Flood Control Act of 1944.
- Authorized to market power generated at Federal hydroelectric facilities in coordination with U.S. Army Corps of Engineers at cost of service.

# About SWPA – Registered Functions

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- Transmission Operator
- Transmission Owner
- Resource Planner
- Balancing Authority
- Transmission Planner



# About SWPA - Office Locations

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- Tulsa, OK  
Headquarters
- Nixa, MO  
Springfield, MO  
Scheduling &  
Dispatch Centers
- Gore, OK  
Jonesboro, AR  
Springfield, MO  
Maintenance  
Offices



# System - Map



# About SWPA - Customers



- 113 wholesale customers in: Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and Texas.
- Customers are not-for-profit electric cooperatives, municipalities, and military installations.
- 10 million end users.



# Built For The People



**Partnering with 153 local power companies that supply electricity to approximately 10 million people across seven Southeastern states with 60 directly served customers, including 53 industrial customers and 7 military and federal installations.**

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## Our mission

At TVA, our unique, long-standing mission drives and inspires us daily to pursue new ideas and innovative solutions to improve our service to you. Our mission is just as relevant today as it was nine decades ago when Congress created TVA: harness the potential of the rich resources of the Tennessee Valley region to make life better for the people who call it home. The strength of TVA is its people...an experienced, talented team committed—each and every day—to improving the quality of life for the approximately 10 million people we serve.

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## Largest Public Power Provider

In the United States

## 4th Largest Electricity Generator in the Nation

Based on Total Electric Generation in 2022

## One of the Nation's Largest Transmission Systems

In high voltage lines among United States Utilities

More than 16,000 miles of transmission lines and 69 interconnections with neighboring electric systems

## 3rd Largest Nuclear Fleet

In the United States, providing 42% of TVA's energy

## Cares for 40,000 Miles of Rivers, Streams and Tributaries

Including the 652-mile Tennessee River

## Approximately 335,000 Jobs

And \$45.9 Billion in projected capital investments over the past five years; expected to create more than 100,000 jobs and retain more than 235,000 jobs

## Residential rates lower than 75% of the top 100 U.S. utilities

Based on U.S. Energy Information Administration June 2023 12-month rolling average



# Energy



## One of the nation's largest generation portfolios, clean and diverse

The focus on providing clean, affordable, reliable power to the Tennessee Valley region is foundational to the TVA mission of service. TVA has a diverse, dynamic and adaptable generation portfolio that includes nuclear, coal, gas, hydro and other renewables, with an emphasis on maintaining safe operations and secure facilities.

### 32,139 MW

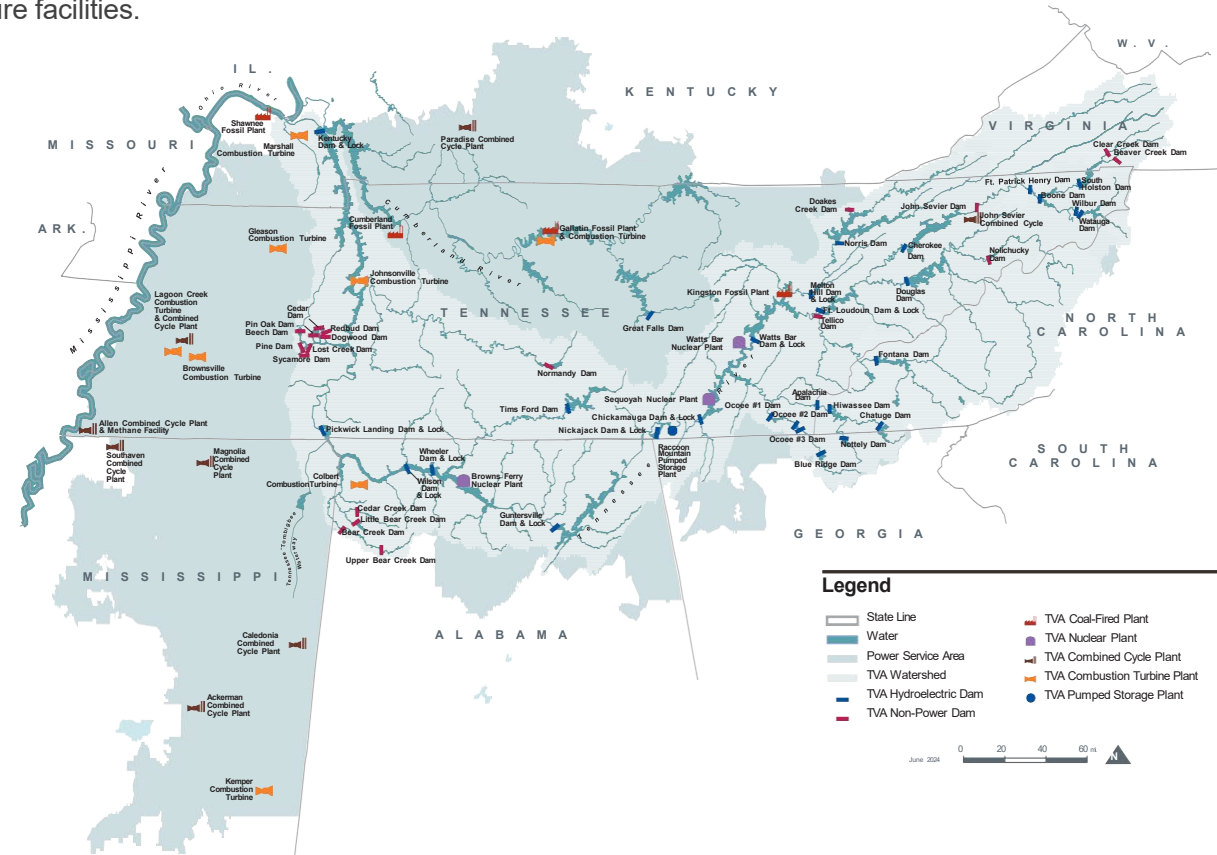
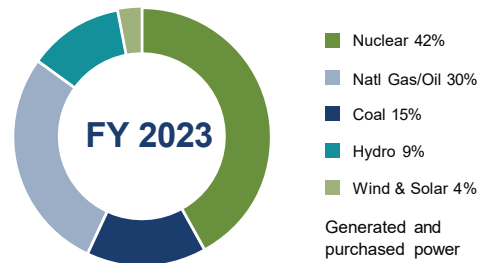
Summer Net Capacity  
TVA-operated generation

Working to add  
**10,000 MW of solar energy by 2035**

### Generating Assets

- 3 Nuclear Sites
- 4 Coal-Fired Sites
- 29 Hydroelectric Sites
- 1 Pumped-Storage Site
- 9 Combustion Turbine Gas Sites
- 8 Combined Cycle Gas Sites
- 9 Solar Energy Sites
- 1 Diesel Generation Site

### Robust and Diverse Energy Supply



# Environmental Stewardship



## Carbon Reduction

TVA is a leader in clean energy generation in the Southeast, and we're a public power company taking action to reduce carbon levels even more over the coming years. With our strategically diversified and increasingly clean power generation portfolio, TVA is a national leader in reducing carbon emissions.

**55%**

of TVA energy carbon free in FY 2023

**50%**

reduction in carbon emissions rate since 2005

# Economic Development



## Powerful Partnerships

TVA works to attract new companies and investments to the region, engage existing business and industries, and serve with our partners to help communities prepare for economic growth.

**335,000 Jobs**    **\$45.9 Billion**

Projected capital investments in the region generated by TVA economic development activity over the past five years. Expected to create 100,000+ new jobs and retain 235,000+ jobs

**58,300 Jobs**    **\$9.2 Billion**

Projected capital investments in the region in FY 2023 alone, expected to create 12,200 jobs and retain 46,100 jobs in the Valley

**Top Utility in  
Economic Development  
18 Consecutive Years**

By Site Selection Magazine

# Who is WAPA?

WAPA is one of four power marketing administrations within the U.S. Department of Energy whose role is to market and transmit wholesale electricity from multi-use water projects.

Our service area encompasses a 15-state region of the central and western U.S. where our transmission system carries electricity from 57 hydropower plants operated by the Bureau of Reclamation, U.S. Army Corps of Engineers and the International Boundary and Water Commission.

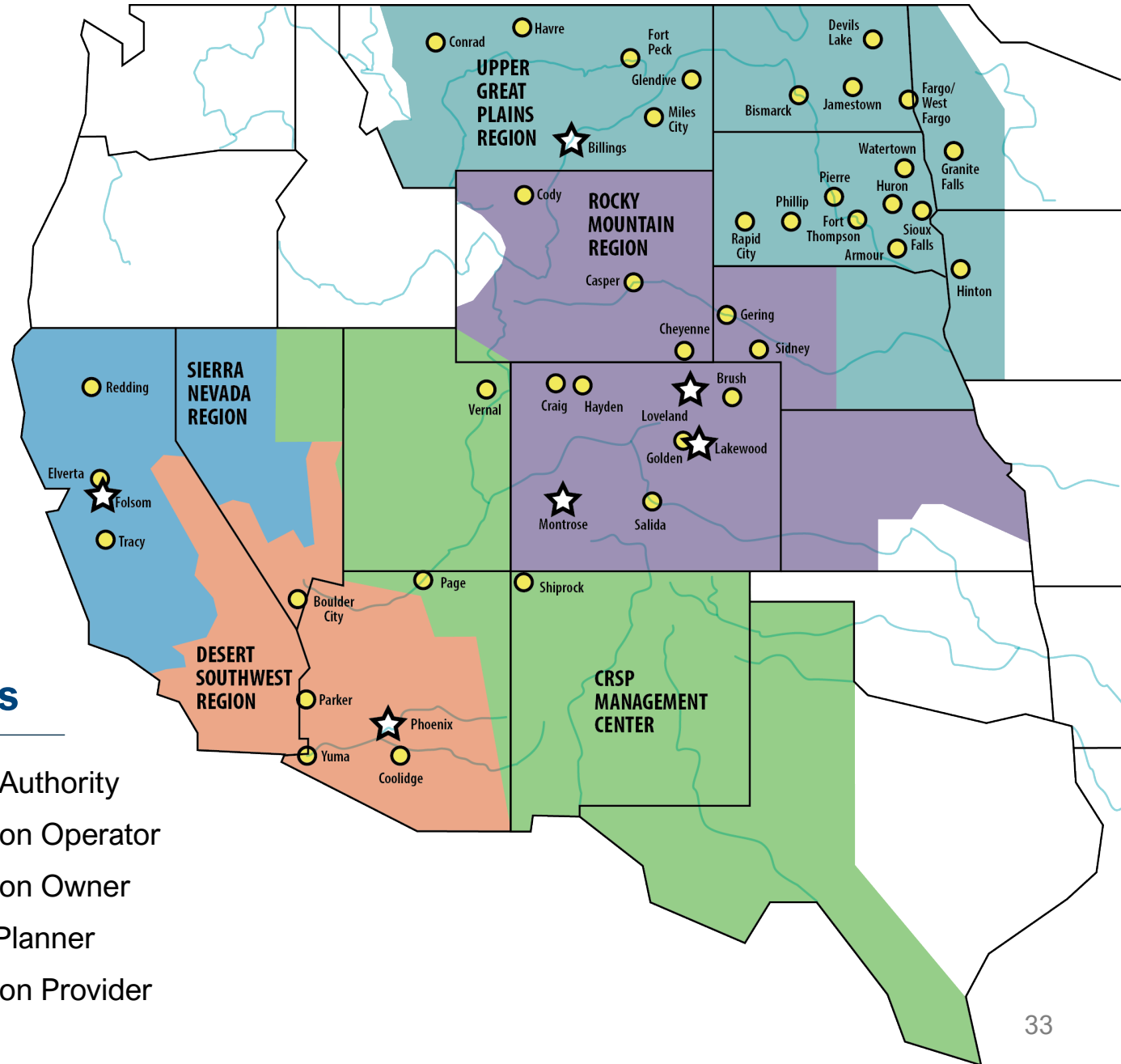
We sell our power to preference customers such as federal and state agencies, cities and towns, rural electric cooperatives, public utility districts, irrigation districts and Native American tribes. They, in turn, provide retail electric service to millions of consumers in the West.

## Footprint and duty stations

-  Upper Great Plains Region (UGP)
-  Rocky Mountain Region (RM)
-  Sierra Nevada Region (SN)
-  Desert Southwest Region (DSW)
-  Colorado River Storage Project Management Center (CRSP)

## NERC Registrations

- BA Balancing Authority
- TOP Transmission Operator
- TO Transmission Owner
- RP Resource Planner
- TP Transmission Provider





# What WAPA manages

Top 10 largest transmission utility in the country.

- **293**  
transformers
- **658**  
buildings
- **489**  
communication sites
- **10,035**  
megawatts installed  
capacity
- **19,907**  
gigawatt hours net  
generation
- **687**  
customers
- **40 Million**  
people served

