

ISSUE BRIEF: TRI-STATE AND RENEWABLE ENERGY

NOVEMBER 2017



Summary

In 2016, more than 27 percent of the energy consumed by Tri-State's member systems' retail customers came from renewable resources, making the membership an industry leader for its use of renewable power.

Since its inception, Tri-State has used renewable energy through its allocation of federal hydropower, and since 2008, Tri-State has added over 475 megawatts of utility-scale wind, solar and other renewable projects to its portfolio. Tri-State also supports the development of local renewable resources with incentives and technical support for the development of member-owned or sponsored projects. Collectively, these member projects (completed or under development) account for an additional 145 megawatts of distributed generation as of October 2017.

What are the association's renewable energy sources?

Tri-State's member systems access renewable resources in a number of ways. Tri-State purchases the output of specific renewable generation projects under long-term contracts, our member systems have renewable energy projects they own or control, and many retail customers have onsite renewable energy. Tri-State also has long-term power supply contracts with other providers, specifically the Western Area Power Administration (WAPA) and Basin Electric Power Cooperative, which include renewable energy sources. While taking advantage of a diversity of sources allows Tri-State to manage the cost of integrating renewable energy into its system, it also makes calculating the percentage of renewable energy consumed by its members somewhat complex.

How does Tri-State define renewable energy?

Tri-State considers an energy source renewable if the generation source is registered with an independent, regional renewable energy tracking system such as the Western Renewable Energy Generation Information System (WREGIS) in the western U.S., or the Midwest Renewable Energy Tracking System (M-RETS) in the Midwest. These tracking systems provide a reliable platform to verify and track renewable energy credits (RECs) that result from the generation of renewable energy. Generally, a REC represents proof that one (1) megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource. In a small number of cases, a generator may not be registered with a tracking system, but Tri-State will still include its generation in its renewable energy calculation if the technology is widely-accepted as such and there is documentation of its generation output.

Eligible RECs counted by Tri-State come from:

- Tri-State's utility-scale renewable power purchase agreements (PPAs) and other power supply contracts
- Member systems' renewable and distributed generation projects under Board Policy 115 contracts
- Member systems' net-metered distributed generation projects that are reported to Tri-State under Board Policy 117

Calculating the percentage of renewable energy in Tri-State's portfolio

Renewable energy consumed by Tri-State's member systems and their member-owners (verified by WREGIS or other documentation)

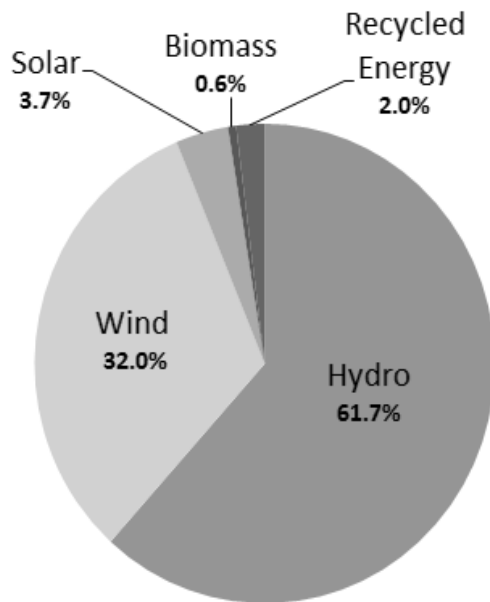
Total member system retail sales *plus* net-metered energy receiving REC payments from Tri-State (Policy 117)

= 27.35%

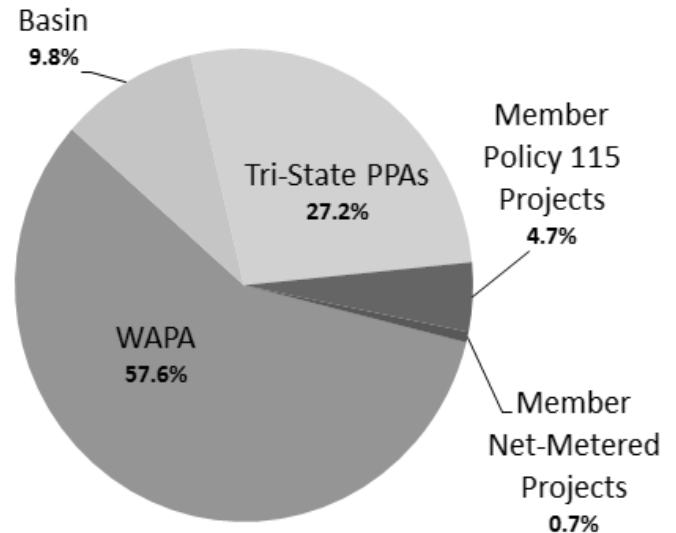


The Association's 2016 Renewable Portfolio

By Technology:



By Source:



Tri-State's Renewable Energy Percentage vs. Renewable Portfolio or Energy Standard Compliance

Tri-State serves members in four states: Colorado, Nebraska, New Mexico and Wyoming. Colorado and New Mexico have renewable portfolio or energy standards (RPS) that are binding for Tri-State and its member systems. The statutes governing eligibility of an energy source differ in Colorado and New Mexico and in some cases, employ certain multipliers. The portfolio of resources Tri-State uses in its calculation of renewable energy consumed by its members' retail customers differs from those resources that may be used for determining RPS compliance.

Tri-State and its members are currently complying with their reporting and compliance obligations in Colorado and New Mexico.



Question and Answer

What are the dominant technologies in Tri-State's renewable portfolio?

Hydropower comprised approximately 62 percent of Tri-State's renewable energy portfolio in 2016. This reflects Tri-State's federal hydropower allocation from the Western Area Power Administration (WAPA) and Tri-State's purchase of the output from small hydro projects throughout its service territory. In 2017 and beyond, the amount of renewable energy in other technologies groups such as wind and solar will grow based on the recent addition of three new utility-scale projects to the Tri-State portfolio. Member system project development, particularly in solar energy projects, also continues to grow.

How much of Tri-State's renewable portfolio comes from its allocation from WAPA?

Approximately 58 percent in 2016. WAPA also provides hydropower to Basin Electric Power Cooperative. As a Class A member of Basin, Tri-State receives a share of RECs from Basin's renewable energy portfolio. The WAPA RECs that are allocated to Tri-State from Basin are counted with the Basin renewable percentage and not with the WAPA portion.

Does Tri-State's WAPA allocation really 'count' as renewable?

WAPA's hydro generating facilities are registered with WREGIS as renewable generators and the associated renewable energy credits (RECs) are verified and tracked by this independent, third-party platform. The RECs associated with our WAPA allocation and transferred to Tri-State each year are included in our renewable energy calculation. While some of WAPA's facilities are not eligible for Colorado and/or New Mexico state-specific renewable portfolio/energy standard (RPS) compliance, the resource type (hydroelectricity) is considered renewable by Tri-State, regional tracking systems and others.

Are WAPA's pumped-storage facilities considered renewable?

No, they are not. WAPA does not allocate any RECs associated with this technology.

Are the RECs associated with Tri-State's WAPA allocation tracked in WREGIS?

Yes, the RECs associated with our WAPA allocation are transferred to Tri-State's WREGIS account from WAPA each spring for the previous year.

If large hydropower resources such as those associated with Tri-State's WAPA allocation can't be used towards satisfying RPS obligations, is Tri-State still able to meet its obligations in Colorado and New Mexico?

Based on its portfolio of renewable resources and current and projected REC inventory, Tri-State and its member-systems are currently in compliance and confident in its ability to meet all the RPS requirements. Tri-State does not have specific compliance obligations in New Mexico, only its member systems.

Is it true that none of the WAPA RECs can be used to satisfy RPS requirements in Colorado and New Mexico?

This is not true. Although statutes in both Colorado and New Mexico limit eligibility of hydro generators over a certain size to use toward meeting compliance targets, it is important to note that some of the RECs Tri-State receives from its WAPA allocation are associated with smaller generators whose RECs are eligible for RPS compliance.



What is WREGIS (Western Renewable Energy Generation Information System) and what role does it play in calculating how much of Tri-State's supply portfolio comes from renewable sources?

WREGIS is an independent, not-for-profit, renewable energy tracking system for the region covered by the Western Electricity Coordinating Council (WECC). It is located in WECC's offices in Salt Lake City. WREGIS tracks renewable generation from units that register in the system by using verifiable data and creating RECs for that generation. The vast majority of the generators (and associated RECs) that Tri-State counts in its renewable calculation are registered in WREGIS or its counterpart in the Midwestern United States, M-RETS (Midwest Renewable Energy Tracking System).

Is every renewable project that Tri-State counts in its calculation registered in WREGIS?

There are currently only a couple small member projects that were not initially registered with WREGIS and whose registrations should be completed by the end of 2017. Net metered installations (in states other than New Mexico) are also not registered with WREGIS. Tri-State relies on attestations from our member systems with detailed net metered generation information to quantify eligible net metered RECs.

Does Tri-State ever sell renewable energy credits (RECs) to third parties or are all RECs kept for use by Tri-State and its members system?

Tri-State occasionally sells RECs when we are able to negotiate favorable prices. In 2016, Tri-State sold 141,325 RECs sourced from our utility scale wind projects. When sold to third parties, these RECs are transferred from Tri-State's WREGIS account to the buyer's account and are not included in Tri-State's renewable percentage calculation.

Are there any renewable projects or RECs that Tri-State excludes from its renewable percentage calculation?

Yes, there are several examples of exclusions from our calculation: (1) RECs sold to a third party outside the membership; (2) Tri-State's purchase of the output of a renewable project that does not include the rights to RECs (for example, the Tri-County Water Hydropower Project in Ridgway, Colorado); (3) member systems' net-metered customer generation that is not reported to Tri-State under Policy 117; (4) renewable generation from a Qualifying Facility (QF) that is serving a member system load outside of Policy 115.

Does Tri-State count REC multipliers available in the Colorado RES and NM RPS statutes in its renewable percentage calculations?

No, these multipliers are used only for RES/RPS compliance purposes and are not used in the Tri-State renewable percentage calculation. Multipliers – meaning that a MWh of generation would count for more than one eligible REC - were included in early versions of state statutes to incent certain technologies and geographic location. Once a project qualified for multipliers, they retain that treatment for the life of the project and so many of Tri-State's and its members systems' projects do qualify for multipliers when calculating eligible RECs for compliance under each statute. If Tri-State were to count the multipliers, it would be over 29 percent renewable in 2016.

How are member systems' net metered accounts treated in the renewable percentage calculation?

Only those RECs reported to Tri-State via member system attestations associated with Policy 117 are counted in the renewable percentage calculation. Only 17 member systems currently submit net metering account attestations to Tri-State under Policy 117.



If a member system has net metered customers, but does not participate in Tri-State's Policy 117, does Tri-State include an estimate of those in its renewable energy calculation?

No. We recognize that there are member systems with retail net metering customers who choose not to participate in Policy 117 for payment for those RECs. That amount of energy and RECs would be difficult to estimate and are therefore not included in the numerator of our formula.

The denominator in your calculation says member retail sales and net-metered energy receiving REC payments from Tri-State. What data sources does Tri-State use for these?

Tri-State uses retail sales data gathered from its member systems' Rural Utilities Service Form 7 filings, which do not include net-metered generation. If a member system claims REC payments from Tri-State for retail net-metered generation projects under Board Policy 117, those figures, gathered from member system attestation forms, are included in both the numerator and denominator of the calculation.

If a member system sells RECs from a Policy 115 project instead of selling them to Tri-State under Board Policy 117, how does Tri-State count those RECs?

In a limited number of cases, a member system has chosen to keep the RECs from a distributed generation project it does under Policy 115 and sell those RECs to a retail customer. Unless those RECs are sold to a third party outside the association, Tri-State will include those in the renewable energy calculation because the renewable energy is staying in the membership.

What percentage of the association's renewable portfolio comes from its member systems?

Approximately 5 percent of our renewable portfolio came from member systems in 2016 -- which includes members' local distributed generation projects under Policy 115 and net metered customers whose generation is reported to Tri-State under Policy 117.

Why does Tri-State include its member systems' Policy 115 projects and net metered customers in its calculation?

The percentage calculation used by Tri-State is based on energy consumed by member system retail customers -- so it is appropriate to include local projects in the overall association's renewable energy statistic. It is also worth mentioning the association as a whole supports the development of these projects through Policies 115 and 117, whether a particular member system has multiple projects or no projects.

In the last year, Tri-State has added 55 MW of solar to its portfolio and will soon add another 75 MW wind project in SE Colorado. What are Tri-State's future plans after these projects are completed?

Tri-State will continue to evaluate new renewable projects based on economic benefit to the association, while also considering impacts on its existing generation assets, reliability and integration of those resources in an organized market such as SPP.