



2023 MEMBER VALUE

SPP'S MEMBER VALUE STATEMENT

By SPP External Affairs

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2023 MEMBER VALUE STATEMENT

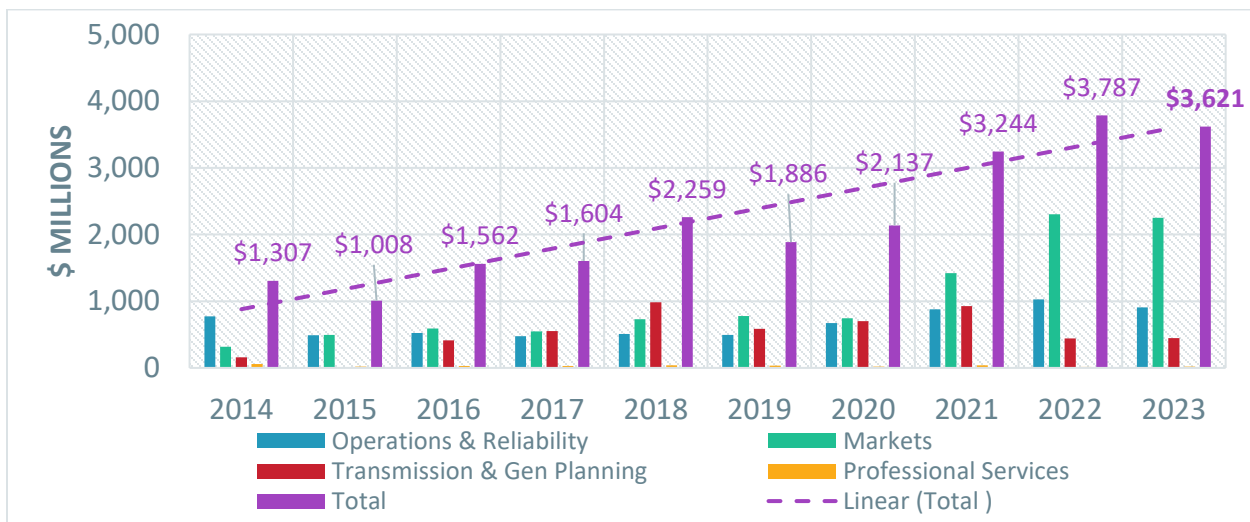
For 2023, SPP quantified member benefits for four essential functions: operations and reliability, markets, transmission, and professional services.

Operations & Reliability	Markets	Transmission	Professional Services
<ul style="list-style-type: none"> • Reliability • Reserve Margin 	<ul style="list-style-type: none"> • Markets • Regulation 	<ul style="list-style-type: none"> • Robust transmission • Wind integration • Planning margin 	<ul style="list-style-type: none"> • Compliance • Settlements • Engineering • Tariff & scheduling • Training

Staff used quantitative and qualitative estimated values of various areas of SPP’s services to calculate the value provided to members through enhanced reliability; increased efficiencies and economics; consolidated functions that reduced human resources; and improved environmental, public policy and local economic impacts. This methodology captures benefits both to SPP’s members and to the region of the RTO’s bulk electric system.

The analysis of 2023 data found annual net benefits to members of **more than \$3.621 billion**, provided at a **benefit-to-cost ratio of 20-to-1**. Both these figures are slightly below the 2022 MVS, but well above the years 2014-2020. Increases in 2021 and 2022 were driven by market energy cost savings with fuel costs increasing again in 2023. Figure 1 shows the historical net benefits provided annually to members.

Figure 1: Yearly Member Value 2014-2023



2023 MVS CALCULATIONS

RELIABILITY (\$74.0 MILLION)

SPP’s performance of its reliability coordination (RC) function – bulk electric system monitoring, congestion management, situational awareness, and coordination between entities – benefits its members. For 2023, SPP calculated the difference between the costs of legacy balancing authorities (LBA) performing reliability functions independently, with their coordinators, and SPP’s centralized reliability coordination of the RTO region. SPP estimated 29 full-time equivalent (FTE) positions (in Operations and IT departments) per LBA at an average cost of \$150,000 per FTE across 17 LBA. This is an estimated **\$74.0 million benefit**.

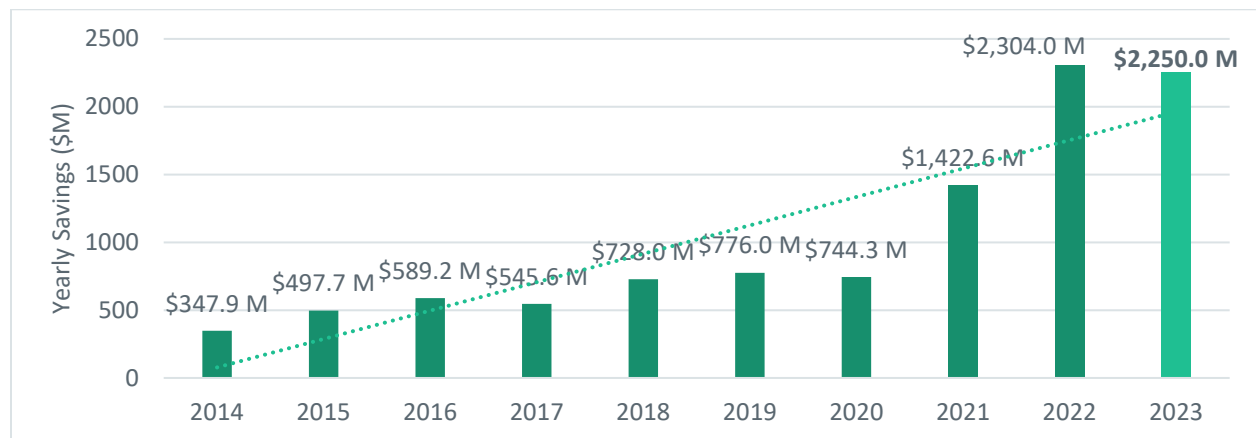
RESERVE SHARING (\$831.2 MILLION)

SPP provides reserve-sharing services to its members through its administration of the SPP Reserve Sharing Group (RSG). Participants in the RSG leverage generation diversity across a larger geographical region to reduce the reserve capacity needed to address unexpected power losses. For 2023, SPP staff calculated (1) generation diversity capacity savings, (2) loss of opportunity for energy sales and (3) required capacity margin for reserves, and (4) the loss of opportunity for energy arbitrage if the LBA needed to withhold capacity for reserves. Together these values yielded an estimated benefit in 2023 of **\$831.2 million**.

MARKETS OPTIMIZATION (\$2,250.0 MILLION)

SPP’s market system serves load in the BA utilizing the most economical generation while respecting transmission system limitations. It co-optimizes energy and reserve products with consideration to deliverability and losses on the transmission system. Staff analyzed market data for SPP’s Integrated Marketplace for 2023 compared to the simulated performance of LBAs for the same days and hours. This resulted in an estimated benefit of **\$2,250.0 million** for 2023.

Figure 2: Annual market benefits 2014-2023



WIND INTEGRATION (\$148.1 MILLION)

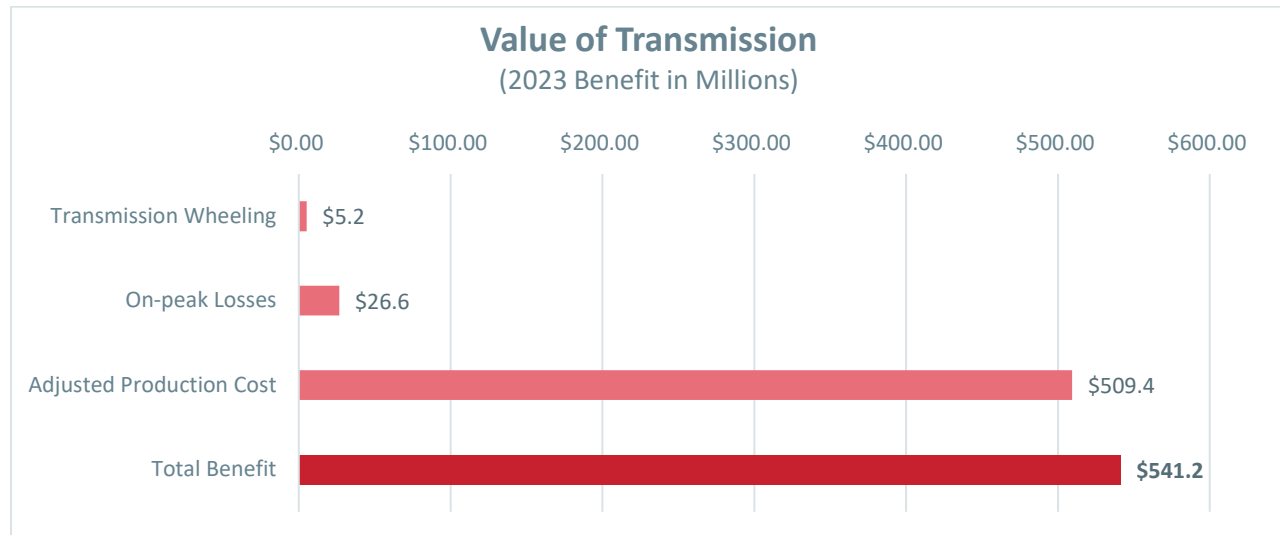
SPP facilitates the integration of wind resources into the grid through its generation interconnection studies, transmission planning, consolidated balancing authority and the Integrated Marketplace. To quantify SPP’s contribution to wind integration, SPP estimates that the Market & Regulation and Value of Transmission calculations capture the RTO services that facilitate increased wind integration. Other benefits that SPP, as the BA, provides include geographical siting, wind uncertainty forecast and regulation reserve requirements. The sum of these three elements is an **estimated \$148.1 million value for members.**

VALUE OF TRANSMISSION (\$541.2 MILLION)

SPP’s centralized transmission studies facilitate the construction of transmission projects that improve reliability and deliverability of least cost generation to load centers. Staff used SPP’s 2021 Value of Transmission (VOT) Study to inform calculations for this category.

To calculate the value of transmission for the MVS, SPP considered three key benefits: reduced adjusted production costs, increased transmission wheeling revenues, and reduced on-peak losses. The MVS excludes other VOT benefits (reliability and wind benefits) to prevent overlap with other calculations of benefits in the MVS. Staff estimates overall benefits for SPP’s directed transmission expansion to exceed \$27 billion over 40 years. The 2023 annual benefit to members has an **estimated value of \$541.2 million.**

Figure 5: Value of Transmission



CAPACITY PLANNING SAVINGS (\$282.0 MILLION)

SPP specifies a minimum planning reserve margin that each load-responsible entity must maintain to ensure adequate resource capacity is planned to meet reliability thresholds. SPP's regionalized administration of resource adequacy creates savings over independent management by individual LBAs. SPP calculated the reduction in capacity and planning reserve margin requirements based on benefits realized due to load diversity, which compares SPP's coincident peak versus the sum of each load-serving entity's singular peak.

The realized reduction of capacity for 2023 is estimated to be 2,804 MW. Considering SPP's cost of new entry, SPP's load-serving members are expected to save \$3.83 billion over the next 40 years. As a result, the 2023 annual **estimated value to members is \$282 million.**

Note: SPP does not calculate generation diversity capacity savings separately here. The benefit measured by the Reserve Sharing category provides a similar benefit. To avoid double counting, all diversity of generation savings is forgone in this section.

TRANSMISSION REVENUE REQUIREMENT (-\$524.6 MILLION)

For many members, SPP's annual net revenue requirement (NRR) represents only part of the cost of their membership. Benefits received from transmission upgrades and regional planning are offset by the costs of annual transmission revenue requirements (ATRR) for certain projects. This MVS studies the Value of Transmission benefits for projects built between 2015 and 2019. The 2023 MVS only accounts for the 2023 annual ATRR for those same projects from that same period. For 2023, the **ATRR for these projects was -\$524.6 million.**

TARIFF & SCHEDULING (\$26.6 MILLION)

SPP has calculated the value of Tariff and Scheduling for 2023 based on the assumption that absent SPP, the collective LBAs would need to staff 96 FTEs (engineering and reservation handling). Based on a fully loaded cost per FTE at \$150,000, the cost avoided by having SPP available is **approximately \$14.4 million per year.**

Without SPP, each legacy balancing authority or transmission service provider would need to maintain OASIS software for Tariff and Scheduling, with an estimated yearly maintenance fee of \$720,000 per entity. The cost avoided is **approximately \$12.2 million.**

PROFESSIONAL SERVICES (\$16.3 MILLION)

Professional Services include two categories of benefits: engineering, and training. SPP quantifies these benefits as the reduction in FTEs resulting from consolidating the functions and services that all SPP's LBAs would have had to staff and perform independently. For the two services, staff estimates a **combined sum of values of \$16.3 million**:

- SPP calculated engineering services benefits as the reduction in 67 FTEs resulting from consolidating the engineering services that all SPP's LBAs would have. Based on a fully-loaded cost per FTE, the cost avoided is **approximately \$10.1 million annually**.
- SPP-based training services benefits from cost avoidance associated with centralized training development and reduction in the number of training staff. Staff estimates that SPP's training saved members an **estimated \$6.2 million** in 2023.

FERC FEES (-\$24.2 MILLION)

Total FERC fees paid by SPP members in 2023 exceeded what members would have paid if they were not part of an RTO. This is primarily because SPP members' native load is considered to be served by transmission in interstate commerce since it is under the RTO. The 2023 estimate of FERC fees is \$28.7 million. When offset by the assessment members would pay if not participating in the RTO, the negative benefit (cost) to the region is **-\$24.2 million**.

ENVIRONMENT, PUBLIC POLICY, AND ECONOMIC DEVELOPMENT (EPPED)

SPP's services contribute to a reduction in environmental impact, improvement of public policies and an increase in economic activity. Though these benefits are not quantified in SPP's MVS, they provide significant benefits to SPP's stakeholders and their customers:

- **Positive environmental impact:** SPP's centralized markets and transmission expansion have improved access to renewables and reduced CO₂ emissions by 30% since 2014, displacing an estimated 408 million metrics tons of CO₂. The dollar value of this reduction, when using a social cost of carbon estimate¹, is **over \$20 billion**.
- **Improved public policy:** SPP helps our members meet state renewable goals, provide alternatives to right-of-way acquisitions, use stakeholder processes to create mutually beneficial policies and more.
- **Economic development:** transmission expansion facilitated by SPP results in billions of dollars of capital investment and thousands of skilled jobs. Our competitive wholesale energy rates are attracting new business to our region.

¹ Brookings Institute, "Social Cost of Carbon" (2023): www.brookings.edu/articles/what-is-the-social-cost-of-carbon

BENEFIT-TO-COST RATIO (20-TO-1)

In 2023, SPP's members realized a total savings and benefits of \$3.787 billion. Each year members fund the operations of SPP through a Net Revenue Requirement (NRR). The NRR is comprised of operating expenses (excluding depreciation and FERC assessment), principal payments on loans for capital expenditures and a capital reserve fund intended to partially offset future borrowings. Miscellaneous revenues provide a reduction in the NRR calculation and include reimbursements for engineering studies. SPP's **2023 NRR was -\$185 million**, resulting in a **benefit-to-cost ratio of 20-to-1**.

MVS INDIVIDUALIZATION

SPP's Aspire 2026 Strategic Plan designates "Sustaining, enhancing and communicating member value" as an enabling capability for SPP and calls for SPP staff to identify more ways to support members with meaningful, accurate and timely assessments of their membership's value. Two strategic milestones in the plan are for SPP's internal MVS Team to (a) identify measures and tools to calculate individual benefits & savings and (b) provide self-assessment tools to members as part of future MVS report releases.

As an appendix to the 2023 MVS report, staff have provided a worksheet (see Worksheet: Individual 2023 SPP Member Value Statement (MVS) Estimation) to help SPP members estimate a portion of the value their organization receives from SPP. This worksheet helps members estimate, based on load ratio, reserve sharing by control zone, share of services benefits and other measures. The worksheet calls for individual organizations to also use their own proprietary data related to benefits received from participation in the Integrated Marketplace and other activities to create a more inclusive estimation of benefits.

CONCLUSION

SPP continues to provide significant, measurable value to its members. SPP benefits come from its performance of four key functions: operations and reliability, markets, transmission, and professional services. The benefits can be measured both quantitatively and qualitatively. Quantitatively, the updated methodology continues to clearly show the value provided by SPP: **more than \$3.621 billion in 2023** at a **benefit-to-cost ratio of 20-to-1**.

Qualitative measurements include considerations of market-to-market coordination, environmental, public policy, and economic development value provided by SPP in the region and to the bulk electric system. These services enhance the SPP member experience and benefit the region. **SPP's value to members and the region continues to grow.**

Worksheet: Individual 2023 SPP Member Value Statement (MVS) Estimation

Benefits Related to Load Share <i>(Applies to Load Serving Members)</i>	Reserve Sharing Benefit <i>(Unique by Control Zone)</i>	Benefits Related to Services <i>(Applies More Broadly)</i>	Unique Benefit(s) <i>(Unique by Member)</i>	Unique Cost(s) <i>(Unique by Member)</i>
<ul style="list-style-type: none"> Market Load Ratio Benefit Wind Integration Value of Transmission Capacity Margin FERC Fees (negative) 	<ul style="list-style-type: none"> RSG Benefit 	<ul style="list-style-type: none"> Reliability Services Tariff & Scheduling Professional Services 	<ul style="list-style-type: none"> Market Virtual Activity Market Revenue (<i>Energy/Transm.</i>) Transmission Rights Hedging Policy facilitation 	<ul style="list-style-type: none"> Schedule 1A Your organization's transmission costs for SPP-directed projects Annual member fee (\$6,000)
Estimate your organization's % of SPP's total load for 2023 and multiply the above MVS by your % load ratio share (LRS)	Identify your control zone's share of RSG to determine your savings from reserve sharing	Low estimate²: divide value of applicable services by 110 <i>(Final # of SPP members in 2023)</i> High estimate: multiply by LRS %	Add your unique benefits	Subtract your unique costs
SPP's total load-related MVS: \$3,880,000,000³	SPP's total RSG for 2023: \$831,200,000	SPP's services benefit: \$116.90 million <ul style="list-style-type: none"> \$74.0M Reliability \$26.6M Tariff \$16.3M Prof. Services 	Each Member Provides: \$ _____	Each Member Provides: \$ _____

How to Estimate Your Individualized MVS: Use the information above, the table on the next page and your own data to estimate values for the highlighted fields below.

Load Share Benefit (LSB)	Reserve Sharing Benefit (RSB)	Services Benefits (SB)	Member's Unique Benefit(s) <i>(user fills in)</i>	Member's Unique Costs <i>(subtract from value total)</i>	Member's net MVS benefit
Multiply your load ratio share (LRS) of SPP's load (table on next page) by SPP's load-related MVS: X.X% * \$3.88B = \$ _____	Reference table on next page for your share of RSG benefits X.X% * \$831M = \$ _____	Value is somewhere <i>between</i> : 1/110 of total: \$1,063,000 LRS% of total: \$ _____	IM virtual: \$ _____ IM revenue: \$ _____ TX rights: \$ _____ Hedging: \$ _____ Policy: \$ _____	1A: -\$ _____ Tx costs: -\$ _____ Member fee: -\$6,000	LRB + RSB + SB + Unique Benefits - Unique Costs = _____

² Some members (e.g. those with no end-use customers) may not benefit from reliability or tariff services. This would result in a larger share for other members.

³ This figure is larger than the regional total MVS because it excludes ATRR cost. To individualize, each member subtracts their unique ATRR in the right column.

Worksheet: Individual 2023 SPP Member Value Statement (MVS) Estimation

	Control Zones																	
LSE	CSWS	EDE	GRDA	INDN	KACY	KCPL	LES	MPS	NPPD	OKGE	OPPD	SECI	SPRM	SPS	WAUE	WFEC	WR	% of LRS by LSE
AECC	1.27%									0.43%								1.71%
AEPM_X	15.54%																	15.54%
BEPM									0.29%						9.08%			9.37%
CHAN																	0.13%	0.13%
EDEP		1.85%																1.85%
FREM											0.20%							0.20%
GRDX			2.80%															2.80%
GRIS									0.29%									0.29%
GSEC	0.04%									0.01%				2.50%				2.55%
HAST									0.12%									0.12%
HMMU															0.01%			0.01%
INDN				0.38%														0.38%
KBPU					0.90%													0.90%
KCPS						5.76%		3.32%				0.01%						9.09%
KMEA		0.00%				0.16%						0.26%				0.00%	0.19%	0.61%
KPP												0.03%					0.27%	0.30%
LESM							1.33%											1.33%
MECB															0.10%			0.10%
MEUC						0.11%		0.06%									0.69%	0.86%
MIDW												0.04%					0.63%	0.66%
MRES															0.48%			0.48%
NSPP															0.00%			0.00%
NWPS															0.64%			0.64%
OGE										11.87%								11.87%
OMPA	0.29%									0.73%							0.10%	1.12%
OPPM											4.28%							4.28%
OTPW															0.00%			0.00%
PARL																	0.01%	0.01%
PEC										0.06%						0.27%	0.03%	0.37%
SEPC												1.78%						1.78%
SPSM														9.33%				9.33%
SSCN									0.09%									0.09%
TEA									5.38%		0.08%		1.22%		0.00%			6.69%
TNSK	0.00%								0.05%						0.07%			0.12%
UGPM															1.63%			1.63%
WFES	0.01%															3.45%		3.46%
WRGS										0.01%		0.03%					9.31%	9.35%
% of LRS by Control Zone	17.15%	1.85%	2.80%	0.38%	0.90%	6.03%	1.33%	3.38%	6.21%	13.12%	4.56%	2.15%	1.22%	11.83%	12.02%	3.82%	11.27%	100%