Associated Electric Cooperative, Inc.

Independent Auditor's Reports and Consolidated Financial Statements

December 31, 2022 and 2021

Associated Electric Cooperative, Inc.

December 31, 2022 and 2021

Contents

Independent Auditor's Report 1

Consolidated Financial Statements

Balance Sheets 3

Statements of Revenues and Expenses 4

Statements of Comprehensive Income 5

Statements of Patronage Capital and Other Equities 6

Statements of Cash Flows 7

Notes to Financial Statements 9

Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on and Audit of Financial Statements Performed in Accordance with *Government Auditing Standards* – Independent Auditor's Report 44

FORVIS
910 E. St. Louis Street, Suite 200 / Springfield, MO 65806
P 417.865.8701 / **F** 417.865.0682
forvis.com

Independent Auditor's Report

Board of Directors and Members
Associated Electric Cooperative, Inc.
Springfield, Missouri

Report on the Audit of Consolidated Financial Statements

Opinion

We have audited the consolidated financial statements of Associated Electric Cooperative, Inc. and its wholly owned subsidiaries (Associated), which comprise the consolidated balance sheets as of December 31, 2022 and 2021, and the related consolidated statements of revenues and expenses, comprehensive income, patronage capital and other equities, and cash flows for the years then ended, and the related notes to the consolidated financial statements.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of Associated as of December 31, 2022 and 2021, and the consolidated results of their operations, changes in patronage capital and other equities, and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States (*Government Auditing Standards*). Our responsibilities under those standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements" section of our report. We are required to be independent of Associated and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about Associated's ability to continue as a going concern within one year after the date that these consolidated financial statements are available to be issued.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Associated's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statements.

- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about Associated's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated February 10, 2023, on our consideration of Associated's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Associated's internal control over financial reporting and compliance.

FORVIS, LLP

Springfield, Missouri
February 10, 2023

Associated Electric Cooperative, Inc.

Consolidated Balance Sheets

December 31, 2022 and 2021

(In Thousands of Dollars)

Assets

	2022	2021
Utility Plant		
Electric plant in service	$ 4,711,800	$ 4,598,450
Construction work in progress	163,742	126,206
	4,875,542	4,724,656
Less accumulated depreciation	(2,582,884)	(2,468,284)
Total utility plant	2,292,658	2,256,372
Other Property and Investments		
Member construction advances, net	15,735	16,919
Nonutility property	31,379	31,379
Right of use asset-operating leases	1,407	-
Net investment in direct financing leases	2,208	2,594
Total other property and investments	50,729	50,892
Restricted and Designated Long-Term Assets		
Other restricted and designated assets	22,759	25,967
Investments in associated organizations	28,042	27,828
Total restricted and designated long-term assets	50,801	53,795
Other Long-Term Assets		
Deferred regulatory debits	57,456	38,788
Other deferred assets	70,408	40,299
Total other long-term assets	127,864	79,087
Current Assets		
Cash and cash equivalents	172,655	184,172
Designated cash and cash equivalents	70,482	130,482
Designated short-term investments	60,000	-
Accounts receivable	154,905	99,359
Materials and supplies inventory	96,055	88,396
Fuel inventory	57,326	51,291
Other current assets	58,451	44,762
Current portion of deferred regulatory debits	10,734	4,220
Total current assets	680,608	602,682
Total assets	$ 3,202,660	$ 3,042,828

See Notes to Consolidated Financial Statements

Capitalization and Liabilities

	2022	2021
Patronage Capital and Other Equities		
Memberships	$ 12	$ 12
Patronage capital	715,362	715,512
Other equities	55,543	55,543
Accumulated other comprehensive loss	(3,901)	(16,200)
Total patronage capital and other equities	767,016	754,867
Long-Term Debt, Excluding Current Maturities		
Federal Financing Bank	937,829	935,195
CoBank	211,612	134,223
National Rural Utilities Cooperative Finance Corporation	20,000	23,333
Private placement notes	508,477	524,660
Total long-term debt, excluding current maturities	1,677,918	1,617,411
Other Long-Term Liabilities		
Deferred regulatory credits	219,263	190,801
Other deferred liabilities	60,901	41,671
Asset retirement obligations	73,840	49,005
Accumulated provision for postretirement benefits	24,488	35,398
Total other long-term liabilities	378,492	316,875
Current Liabilities		
Accounts payable	154,697	144,281
Current maturities of long-term debt	72,960	69,850
Payable to member cooperatives	44,941	46,817
Other current and accrued liabilities	54,212	52,078
Current portion of asset retirement obligations	15,599	15,160
Current portion of deferred regulatory credits	36,825	25,489
Total current liabilities	379,234	353,675
Total capitalization and liabilities	$ 3,202,660	$ 3,042,828

Associated Electric Cooperative, Inc.
Consolidated Statements of Revenues and Expenses
Years Ended December 31, 2022 and 2021
(In Thousands of Dollars)

	2022	2021
Operating Revenues		
Members	$ 1,018,560	$ 1,088,786
Nonmembers	554,703	395,653
Total operating revenues	1,573,263	1,484,439
Operating Expenses		
Generation operation	820,177	760,688
Generation maintenance	116,941	99,800
Power purchased	198,670	186,930
Transmission	116,244	104,745
Depreciation and amortization	101,554	97,458
Contracted generation	44,747	42,742
Administrative and general	83,900	75,898
Taxes	7,054	5,758
Accretion of asset retirement obligations	1,877	1,667
Total operating expenses	1,491,164	1,375,686
Operating Margin Before Interest Expense	82,099	108,753
Interest on Long-Term Debt	61,646	62,613
Less interest capitalized	(1,403)	(3,106)
	60,243	59,507
Operating Margin	21,856	49,246
Nonoperating		
Interest and dividend income	5,589	3,570
Other nonoperating income	1,359	1,948
Postretirement benefit expense	(2,161)	(2,560)
Interest expense	(1,696)	(254)
Total nonoperating	3,091	2,704
Net Margin	$ 24,947	$ 51,950

Associated Electric Cooperative, Inc.
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2022 and 2021
(In Thousands of Dollars)

	2022	2021
Net Margin	$ 24,947	$ 51,950
Other Comprehensive Income		
Actuarial gain	12,299	2,922
Comprehensive Income	$ 37,246	$ 54,872

Associated Electric Cooperative, Inc.
Consolidated Statements of Patronage Capital and Other Equities
Years Ended December 31, 2022 and 2021
(In Thousands of Dollars)

	Memberships	Patronage Capital	Other Equities	Accumulated Other Comprehensive Loss	Total
Balance, January 1, 2021	$ 12	$ 688,052	$ 55,543	$ (19,122)	$ 724,485
2021 net margin	-	51,950	-	-	51,950
Other comprehensive income	-	-	-	2,922	2,922
Patronage capital retirements	-	(24,490)	-	-	(24,490)
Balance, December 31, 2021	12	715,512	55,543	(16,200)	754,867
2022 net margin	-	24,947	-	-	24,947
Other comprehensive income	-	-	-	12,299	12,299
Patronage capital retirements	-	(25,097)	-	-	(25,097)
Balance, December 31, 2022	$ 12	$ 715,362	$ 55,543	$ (3,901)	$ 767,016

Associated Electric Cooperative, Inc.
Consolidated Statements of Cash Flows
Years Ended December 31, 2022 and 2021
(In Thousands of Dollars)

	2022	2021
Operating Activities		
Net margin	$ 24,947	$ 51,950
Reconciliation of net margin to net cash provided by (used in) operating activities		
Depreciation and amortization	107,787	103,542
Accretion of asset retirement obligations	3,665	1,667
Net gain on sale of property, plant, and equipment	(4)	(491)
Amortization of loan costs and member contribution advances	1,784	1,572
Changes in deferred regulatory debits	(398)	2,871
Changes in asset retirement obligations	(4,606)	(2,861)
Changes in deferred regulatory credits	(1,350)	(131,350)
Changes in current assets and liabilities		
Accounts receivable	(55,505)	14,599
Fuel inventory	(6,035)	3,437
Materials and supplies inventory	(7,659)	(1,716)
Accounts payable	30,283	10,513
Other current and accrued liabilities	(3,901)	13,952
Other operating activities, net	5,668	(3,933)
Net cash provided by operating activities	94,676	63,752
Investing Activities		
Capital expenditures	(144,728)	(204,715)
Reimbursement of capital expenditures	396	334
Proceeds from sale of property, plant, and equipment	19	812
Purchases of available-for-sale investments	(2,662)	(1,892)
Purchases of held-to-maturity investments	(61,702)	(2)
Sales of available-for-sale investments	1,482	1,573
Proceeds from held-to-maturity investments	2,143	77
Maturity of investments in associated organizations, net	1,615	1,410
Other investing activities, net	627	627
Net cash used in investing activities	(202,810)	(201,776)
Financing Activities		
Net investments (withdrawals) from member cooperatives	(1,876)	8,296
Issuance of long-term debt	135,360	315,168
Retirement of long-term debt	(71,770)	(239,366)
Retirement of patronage capital	(25,097)	(24,490)
Net cash provided by financing activities	36,617	59,608

Associated Electric Cooperative, Inc.
Consolidated Statements of Cash Flows
Years Ended December 31, 2022 and 2021
(In Thousands of Dollars)

	2022	2021
Net Change in Cash and Cash Equivalents and Designated Cash and Cash Equivalents	$ (71,517)	$ (78,416)
Cash and Cash Equivalents and Designated Cash and Cash Equivalents, Beginning of Year	314,654	393,070
Cash and Cash Equivalents and Designated Cash and Cash Equivalents, End of Year	$ 243,137	$ 314,654
Cash and Cash Equivalents	$ 172,655	$ 184,172
Designated Cash and Cash Equivalents	70,482	130,482
Cash and Cash Equivalents and Designated Cash and Cash Equivalents	$ 243,137	$ 314,654
Supplemental Cash Flows Information		
Cash paid for interest (net of amount capitalized)	$ 59,982	$ 52,971
Supplemental Noncash Activities		
Change in capital expenditures included in accounts payable	$ (19,867)	$ 26,509

(In Thousands of Dollars)

Note 1: Summary of Significant Accounting Policies

Associated Electric Cooperative, Inc. (Associated) is an electric generation and transmission cooperative that provides wholesale service to six members, all of which are generation and transmission cooperatives. Each of the members in turn provides wholesale electric power to their member distribution cooperatives located in Missouri, Iowa, and Oklahoma.

Associated maintains its accounting records in accordance with the U.S. Department of Agriculture Rural Utilities Services (RUS) Uniform System of Accounts. The accompanying consolidated financial statements and the related notes have been prepared on the basis of U.S. generally accepted accounting principles (GAAP).

Principles of Consolidation

Associated's wholly owned subsidiaries include AECI Land, LLC (Land), AECI Land 2, LLC (Land 2) and St. Jude Industrial Park Services, Inc. (SJIPS). Land holds property not used for utility purposes. Land 2 owns the water and wastewater treatment facilities that serve the St. Jude Industrial Park in New Madrid, Missouri. SJIPS provides contracted services for management of the St. Jude Industrial Park. For purposes of these consolidated financial statements, the activity of all of these entities is consolidated and all intercompany balances have been eliminated.

Utility Plant, Property, and Equipment

Utility plant, property and equipment are stated at cost. Generally, ordinary utility plant asset retirements and disposals are charged against accumulated depreciation with no gain or loss recognized. Gains and losses are recorded for retirements of general plant assets and entire asset groups. Maintenance and repairs are charged to expense as incurred.

The cost of utility plant is generally depreciated on a straight-line basis over the estimated economic useful lives:

	Estimated Useful Life	Composite Depreciation Rate
Generation plant	32–33 years	3.00%–3.10%
Transmission plant	36 years	3.00%
General plant	3–42 years	2.40%–33.33%

Upon indication of possible impairment, Associated evaluates the recoverability of long-lived assets by comparing the carrying amount of the relevant asset group against the related estimated undiscounted future cash flows expected over the remaining useful life of the asset group. When an evaluation indicates the future undiscounted cash flows are not sufficient to recover the carrying value of the asset group, the carrying value of the asset group is reduced to its estimated fair value. No impairment was recognized in 2022 or 2021.

Nonutility Property

Nonutility property consists of land not currently used for utility purposes. In 2022 and 2021, there were no material purchases or sales of nonutility property.

Asset Retirement Obligations

Associated has asset retirement obligations arising from regulatory requirements to perform asset retirement activities at the time certain property is disposed. A liability is initially measured at fair value and is subsequently adjusted for accretion expense and changes in the amount and timing of the estimated cash flows. The corresponding asset retirement costs are capitalized as part of the carrying amount of the long-lived asset and depreciated over the asset's useful life. Associated's asset retirement obligations include the costs associated with asbestos removal and disposal, reclamation of ash disposal areas, reclamation of landfill sites, reclamation of a biosolids lagoon site, removal of fuel oil tanks, and removal of certain water lines contained in Associated's generating plants (see *Note 4*).

Capitalized Interest

Interest incurred in connection with the construction of capital assets is capitalized and totaled $1,403 and $3,106 in 2022 and 2021, respectively. The average capitalization rates for 2022 and 2021 were 2.872 percent and 2.941 percent, respectively, which is based on Associated's cost of financing. Associated calculates capitalized interest based on a formula prescribed by RUS.

Restricted and Designated Assets

Restricted and designated assets consist of assets pledged for specific purposes including investments in patronage allocations from various membership cooperatives, deferred compensation, support of borrowings and to satisfy various contractual requirements. The classification between current and noncurrent assets is determined by the maturity of the underlying asset.

(In Thousands of Dollars)

Investments

Debt securities held by Associated are classified and recorded in the accompanying consolidated financial statements as follows:

Classified as	Description	Recorded at
Held to maturity (HTM)	Certain debt securities that management has the positive intent and ability to hold to maturity	Amortized cost
Available for sale	Securities not classified as HTM or trading	Fair value, with changes in fair value, including earnings, except deferred compensation funds, which are adjusted through the liability

All Associated's equity securities are classified as available for sale. Associated measures equity securities held in trust for deferred compensation benefits at fair value with changes recognized as part of the accrued deferred compensation benefit and are included in other restricted and designated assets and other deferred liabilities on the accompanying consolidated balance sheets. Associated measures other equity securities at fair value with changes recognized in net margin. Realized gains and losses are computed based on the difference between amortized costs and proceeds received on a specific security identification basis.

Cash and Cash Equivalents

All unrestricted investments with an original maturity of three months or less are considered to be cash equivalents and are stated at cost, which approximates fair value. At December 31, 2022 and 2021, Associated's cash and cash equivalents balance was $172,655 and $184,172, respectively.

Designated Cash and Cash Equivalents

When the Board designates certain cash and cash equivalents for specific purposes, Associated considers the amounts to be designated. The Board may un-designate the amounts in the future. All designated investments with an original maturity of three months or less are considered cash equivalents and are stated at cost, which approximates fair value. Designated cash and cash equivalents consist of funds reserved for the Generation, Environmental and Insurance Reserve Fund and member revenue subject to refund. At December 31, 2022 and 2021, Associated's designated cash and cash equivalents balance was $70,482 and $130,482, respectively.

Designated Short-Term Investments

All investments with an original maturity of twelve months or less are considered short-term. Designated short-term investments are funds segregated and designated by the Board to be used for Generation, Environmental and Insurance Reserve Fund and member revenue subject to refund. At December 31, 2022 and 2021, Associated's designated short-term investments balance was $60,000 and $0, respectively.

Member Construction

Associated has advanced funds for the construction of various member primary transmission projects. These advances are subsequently amortized over the life of the asset as transmission expense. The balance of these advances, net of amortization, totaled $15,735 and $16,919 at December 31, 2022 and 2021, respectively, with related amortization of $1,183 in both 2022 and 2021.

Materials and Supplies Inventory

Materials and supplies are valued using the average cost method. Materials and supplies that are obsolete are written down to an estimated disposal value which approximates net realizable value.

Fuel Inventory

Fuel inventory is valued using the average-cost method. Associated purchases NOx allowances that are recorded in fuel inventory and expensed when used or when they no longer have value. Proceeds from sales of allowances in excess of cost and fees are recorded as a reduction to generation operation expense within the accompanying consolidated financial statements.

Leases

Associated was required to adopt Accounting Standards Codification (ASC) 842, *Leases* in 2022. The most significant impact of this new accounting standard was to record a right of use (ROU) asset and a lease liability for leases that had been treated as operating leases under ASC 840. Associated determines if an arrangement is a lease or contains a lease at inception by determining if there is an identifiable asset, whether the customer (lessee) has the right to obtain substantially all of the economic benefits from the use of the asset, and whether the customer has the right to direct the use of the identified asset. Leases result in the recognition of ROU assets and lease liabilities on the consolidated balance sheets. ROU assets represent the right to use an underlying asset for the lease term, and lease liabilities represent the obligation to make lease payments arising from the lease, measured on a discounted basis. Associated determines lease classification as operating or finance at the lease commencement date. Finance and operating leases are included in other property and investments, current liabilities, and other long-term liabilities in the consolidated balance sheets

At lease inception, the lease liability is measured at the present value of the lease payments over the lease term. The ROU asset equals the lease liability adjusted for any initial direct costs, prepaid or deferred rent, and lease incentives. Associated uses the implicit rate when readily determinable. As most leases do not provide an implicit rate, Associated uses its incremental borrowing rate based on the information available at the commencement date to determine the present value of lease payments. Incremental borrowing rates used to determine the present value of lease payments were derived by reference to a market rate corresponding to the lease commencement date.

The lease term may include options to extend or to terminate the lease if Associated is reasonably to certain to exercise. Lease expense is recognized on a straight-line basis over the lease term.

Associated has elected not to record leases with an initial term of 12 months or less on the consolidated balance sheets. Lease expense on such leases is recognized on a straight-line basis over the lease term.

Payable to Member Cooperatives

Associated provides a short-term- investment program to its member cooperatives and their cooperative members. The funds invested with Associated earn interest at rates established by Associated. The average rate was 1.75 percent and 0.13 percent in 2022 and 2021, respectively. The interest expense is reflected as nonoperating interest expense. At December 31, 2022 and 2021, the members had invested $44,941 and $46,817, respectively, classified as payable to member cooperatives.

Regulatory Matters

Associated is subject to the authoritative accounting guidance applicable to rate-regulated organizations. The Board of Directors has full authority to establish electric rates. Certain items collected in rates have been recorded as regulatory liabilities. These amounts will be recognized as revenue in future periods as costs for which the amounts have been collected are incurred, or when authorized by the Board of Directors (see *Note 13*). Certain expenses have been recorded as regulatory assets, and management believes these amounts are probable of future rate recovery (see *Note 10*). Associated has received RUS approval for its revenue deferral plans in place.

Revenues

Associated's revenues are primarily derived from the sale of electric power to member cooperatives pursuant to long-term wholesale electric service contracts. In addition to member revenue, Associated also has nonmember revenue that is derived from capacity sales, market transactions, energy sales with nonmembers, transmission sales and gas sales.

Member Revenue

Each member contract extends through 2075 and obligates Associated to sell and deliver to the member cooperatives and obligates the member cooperatives to purchase and receive from

Associated all power that they require for the operations of the cooperative system. Pursuant to the contracts, Associated provides two services, energy and demand. Associated's rate structure has three components, an energy rate, a base levelized billing demand (LBD) rate and a peak LBD rate. The billing demand determinants are calculated according to board-approved policy and rates are set as part of the annual Cost of Service Study that is approved by the Board of Directors.

Energy and demand are distinct and separate performance obligations that have the same pattern of transfer to members and are both measurements of the electric power provided to members. Associated transfers control of the electric power to members over time and members simultaneously receive and consume the benefits of the electric power. The progress toward the completion of performance obligations is measured using the output method which is based on monthly meter readings at member substations. Member power bills are calculated monthly based on meter readings and the different components and rates as set forth in the wholesale power agreements. Payments from members are received in accordance with each contract's terms, which is by the end of the following month. Member electric sales revenue is recorded as member revenue on Associated's consolidated statements of revenues and expenses.

Nonmember Revenue

Energy and Capacity Contracts

Market transactions consist of point-of-sale contracts with regional transmission organizations (RTO). Associated does not have a performance obligation to provide future electric power to an RTO beyond the point-of-sale and only sells excess energy if it is available. Customers in this category are PJM, Midcontinent Independent System Operator, Inc. (MISO), and Southwest Power Pool, Inc. (SPP). The RTOs simultaneously receive and consume the benefits of the electric power and Associated recognizes revenue at the point-of-sale based on the prevailing market rate and the quantity of energy transferred.

Associated also enters into capacity contracts with nonmembers that bundle electric power. Energy and capacity revenue in these contracts are distinct performance obligations whose benefits are simultaneously received and consumed by the customer. Associated's obligation to provide energy is a stand-ready performance obligation that is satisfied over time. Progress toward completion of the energy performance obligation is based on the output method of energy transferred to the customer. Revenue is recognized based on the energy price in the contract and the quantity of energy provided to the customer. Progress toward completion of the capacity performance obligation is measured by the passage of time. Revenue is recognized monthly based on stated capacity rates in the contract.

Other energy revenue consists of electric power sales through bi-lateral contracts with nonmembers. Revenue is recognized as energy is transferred to the customer and amounts are based on the energy price in the contract and the quantity of energy provided to the customer.

(In Thousands of Dollars)

Other Nonmember Revenue

Other nonmember revenue consists of transmission and gas revenue. Transmission revenue is recognized as customers use Associated's transmission facilities. Gas revenue is the sale of excess gas to third parties netted with the cost of gas sold. Revenue from the sale of gas is recognized at the point-of-sale.

For the years ended December 31, 2022 and 2021, nonmember revenue consisted of the following:

	2022	2021
Energy and capacity contracts		
Market transactions with RTOs	$ 300,994	$ 212,758
Energy and capacity revenue	113,038	100,539
Other energy revenue	110,823	54,993
Other nonmember revenue	29,848	27,363
Total nonmember revenue	$ 554,703	$ 395,653

Nonoperating Income

For the years ended December 31, 2022 and 2021, interest and dividend income consisted of the following:

	2022	2021
Investments	$ 3,472	$ 1,384
Patronage capital allocations	1,876	1,916
Leasing of transmission lines/equipment	241	270
	$ 5,589	$ 3,570

Credit Risk

Concentration of credit risk with respect to total accounts receivable is due to Associated's customer base. Approximately 58 percent of accounts receivable at December 31, 2022, is due from Associated's six members. The credit risk for accounts receivable is controlled through management monitoring procedures.

Contracted Generation

Contracted generation is the expense of generating units for which Associated has energy and capacity contracts in excess of one year (see *Note 5*).

(In Thousands of Dollars)

Patronage Capital and Other Equities

In accordance with Associated's bylaws, taxable member margins are allocated to members based on their patronage. For the years ended December 31, 2022 and 2021, taxable margins of $48,969 and $63,968, respectively, were allocated to members. Cumulatively, $2,829,572 and $2,780,603 has been allocated and $2,509,160 and $2,485,288 is unpaid at December 31, 2022 and 2021, respectively. For financial reporting, book net margins are allocated to patronage capital.

Accumulated Other Comprehensive Loss

The following table provides the component of accumulated other comprehensive loss at December 31:

Component	2022	2021
Postretirement benefits actuarial losses	$ (3,901)	$ (16,200)

Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Litigation

In the normal course of business, Associated is involved in legal proceedings. In accordance with GAAP, Associated accrues a liability for such matters when it is probable that a liability has been incurred and the amount can be reasonably estimated. When only a range of possible losses can be established, the most probable amount in the range is accrued. If no amount within this range is a better estimate than any other amount within the range, the minimum amount in the range is accrued.

Renewable Energy Credits

Associated is allocated renewable energy credits (REC) as part of its contracts for renewable energy. Proceeds from sales of RECs in excess of cost and fees are recorded as a reduction to purchased power expense within the accompanying consolidated financial statements.

Government Assistance

In November 2021, the FASB issued Accounting Standards Update (ASU) 2021-10, *Government Assistance* (ASC 832), effective for fiscal years beginning after December 15, 2021. This ASU requires entities to disclose information about the types of government assistance received, the accounting for the assistance, and the effect of the assistance on the entity's financial statements.

Associated adopted ASC 832 on January 1, 2022. In accordance with ASC 832, as of December 31, 2022, Associated had incurred $14,710 of expenditures related to COVID-19 and storm damage. During 2022, Associated received a total of $1,222 from The Federal Emergency Management Agency (FEMA) as part of a cost reimbursement plan for these expenditures, offsetting previously recorded operating expenses. At December 31, 2022, Associated had a receivable from FEMA of $11,722 which is included in accounts receivable on the consolidated balance sheets.

Note 2: New Accounting Pronouncements

Accounting Standard Updates Adopted

In February 2016, the FASB issued ASU (Accounting Standards Update (ASU) 2021-102016-02, *Leases* (ASC 842) effective for fiscal years beginning after December 15, 2021. This ASU requires lessees to recognize a lease liability and a right-of-use (ROU) asset on a discounted basis, for substantially all leases, as well as additional disclosures regarding leasing arrangements.

Associated adopted Topic 842 on January 1, 2022, using the comparatives under ASC 840 transition method, which applies ASC 842 at the beginning of the period in which it is adopted. Prior period amounts have not been adjusted in connection with the adoption of this standard. Associated elected the package of practical expedients under the new standard, which permits entities to not reassess lease classification, lease identification or initial direct costs for existing or expired leases prior to the effective date. Associated elected the practical expedient to account for nonlease components and the lease components to which they relate as a single lease component and also elected to keep short-term leases with an initial term of 12 months or less off the balance sheet. Associated did not elect the hindsight practical expedient in determining the lease term for existing leases as of January 1, 2022. Associated elected the practical expedient for land easements.

(In Thousands of Dollars)

Associated elected not to apply ASC 842 to existing or expired land easements that are not currently accounted for under ASC 840 but will assess new and/or modified land easements under ASC 842 to determine whether they contain a lease.

Upon adoption of this standard, Associated recognized operating lease ROU assets and operating lease liabilities of $3,655 and $3,655, respectively, while the accounting for existing capital leases (now referred to as finance leases) remained substantially unchanged. The standard did not have a material impact on the financial statements.

Recently Issued Accounting Standard Updates

Upon issuance of exposure drafts or final pronouncements, Associated reviews new accounting literature to determine the relevance, if any, to its business. Currently there are no new pronouncements that Associated has determined relate to its operations.

Note 3: Utility Plant

Utility plant, at original cost, at December 31, 2022, consisted of the following:

	Generation Plant	Transmission Plant	General Plant	Water and Wastewater Facilities	Total
December 31, 2021	$ 4,056,759	$ 418,880	$ 115,387	$ 7,424	$ 4,598,450
Additions	69,600	40,257	2,638	694	113,189
Retirements			(107)	-	(107)
Contribution in aid of construction	-	268	-	-	268
December 31, 2022	4,126,359	459,405	117,918	8,118	4,711,800
Construction work in progress	138,070	21,706	3,966	-	163,742
Accumulated depreciation	(2,309,025)	(196,206)	(76,808)	(845)	(2,582,884)
Total utility plant	$ 1,955,404	$ 284,905	$ 45,076	$ 7,273	$ 2,292,658

Depreciation and amortization for the year ended December 31, 2022, was $107,787, of which $101,554 was charged to depreciation and amortization expense and $6,233 was included in contracted generation, transmission, and generation operation expense. Depreciation and amortization expense was decreased by $6,862 which was charged to deferred regulatory debits (see *Note 10*).

(In Thousands of Dollars)

Utility plant, at original cost, at December 31, 2021, consisted of the following:

	Generation Plant	Transmission Plant	General Plant	Water and Wastewater Facilities	Total
December 31, 2020	$ 3,856,874	$ 398,579	$ 112,201	$ 6,108	$ 4,373,762
Additions	215,724	12,496	4,138	1,316	233,674
Retirements	(15,839)	-	(952)	-	(16,791)
Contribution in aid of construction	-	7,805	-	-	7,805
December 31, 2021	4,056,759	418,880	115,387	7,424	4,598,450
Construction work in progress	85,229	39,864	1,113	-	126,206
Accumulated depreciation	(2,210,397)	(185,973)	(71,324)	(590)	(2,468,284)
Total utility plant	$ 1,931,591	$ 272,771	$ 45,176	$ 6,834	$ 2,256,372

Depreciation and amortization for the year ended December 31, 2021, was $103,542, of which $97,458 was charged to depreciation and amortization expense and $6,084 was included in contracted generation, transmission, and generation operation expense. Depreciation and amortization expense was decreased by $3,636 which was charged to deferred regulatory debits (see *Note 10).*

Note 4: Asset Retirement Obligations

Associated has accounted for the asset retirement costs associated with certain tangible long-lived assets. Associated has recorded obligations for the removal and disposal of asbestos in Associated's Thomas Hill and New Madrid power plants; reclamation of the landfill site at the New Madrid power plant; reclamation of ash ponds at the New Madrid and Thomas Hill facilities; removal of fuel oil tanks at the Dell and Holden power plants; reclamation of a biosolids lagoon at St. Jude facilities; and removal of certain water lines contained in Associated's generating plants.

Costs incurred upon the adoption of the asset retirement obligation accounting guidance were recorded as a regulatory asset to be recovered in future rates (see *Note 10*). Additionally, Associated's Board has established a policy for the deferral of depreciation and accretion expense associated with coal combustion residual storage facilities that require remediation prior to the end of the plant's assumed useful life (see *Note 10*).

(In Thousands of Dollars)

The following is a reconciliation of the beginning and ending aggregate carrying amount of asset retirement obligations for the year ended December 31, 2022:

	Thomas Hill	New Madrid	Holden	Dell	Water and Wastewater Facilities	Total
December 31, 2021	$ 30,466	$ 32,151	$ 527	$ 752	$ 269	$ 64,165
Less current retirement obligations	(8,900)	(6,260)	-	-	-	(15,160)
Long-term retirement obligations	21,566	25,891	527	752	269	49,005
Current period settlements	(1,108)	(3,497)	-	-	-	(4,605)
Additions	-	-	-	-	-	-
Accretion expense	1,924	1,634	35	56	16	3,665
Cash flow revisions	18,230	7,984	-	-	-	26,214
December 31, 2022	49,512	38,272	562	808	285	89,439
Less current retirement obligations	(13,201)	(2,398)	-	-	-	(15,599)
Long-term retirement obligations	$ 36,311	$ 35,874	$ 562	$ 808	$ 285	$ 73,840

Accretion for the year ended December 31, 2022, was $3,665, of which $1,788 was charged to deferred regulatory debits. The 2022 cash flow revisions are due to changes in the estimates for closing the unlined ash pond at New Madrid and Thomas Hill ash ponds. The 2022 current period settlements are primarily related to the closure of the coal combustion residual storage facilities at New Madrid and Thomas Hill, the New Madrid landfill and the remediation of asbestos at both Thomas Hill and New Madrid.

(In Thousands of Dollars)

The following is a reconciliation of the beginning and ending aggregate carrying amount of asset retirement obligations for the year ended December 31, 2021:

	Thomas Hill	New Madrid	Holden	Dell	Water and Wastewater Facilities	Total
December 31, 2020	$ 30,768	$ 24,503	$ 494	$ 700	$ 254	$ 56,719
Less current retirement obligations	(2,541)	(5,095)	-	-	-	(7,636)
Long-term retirement obligations	28,227	19,408	494	700	254	49,083
Current period settlements	(1,839)	(775)	-	-	-	(2,614)
Additions	-	1,872	-	-	-	1,872
Accretion expense	1,537	1,111	33	52	15	2,748
Cash flow revisions	-	5,440	-	-	-	5,440
December 31, 2021	30,466	32,151	527	752	269	64,165
Less current retirement obligations	(8,900)	(6,260)	-	-	-	(15,160)
Long-term retirement obligations	$ 21,566	$ 25,891	$ 527	$ 752	$ 269	$ 49,005

Accretion for the year ended December 31, 2021, was $2,748, of which $1,353 was charged to deferred regulatory debits. The 2021 cash flow revisions are due to the closure of the slag dewatering pond and changes in the estimates for closing the landfill and unlined ash pond at New Madrid. The 2021 current period settlements are primarily related to the closure of the coal combustion residual storage facilities at New Madrid and Thomas Hill, along with the remediation of asbestos at both Thomas Hill and New Madrid.

Note 5: Contracted Generation

Contracted generation consists of firm capacity received from Associated's hydropower contract and generating units that Associated has contracted to dispatch up to a given quantity of power for at least one year and for which Associated has operating expense responsibility.

Associated has a contract with Southwestern Power Administration (SWPA) effective through April 2031 that entitles Associated to purchase a fixed amount of firm capacity and energy. In 2022 and 2021, Associated's cost of firm power purchased from SWPA was $35,046 and $34,744, respectively.

Under the terms of an agreement with one of its members, Associated is required to reimburse costs associated with the member's ownership interest in the Grand River Dam Authority (GRDA) Unit 2 coal facility, which was terminated in May 2016. Associated will continue to reimburse its member for a deferred loss associated with the termination of this agreement (see *Note 18)*. In 2022 and 2021, Associated's cost related to GRDA Unit 2 was $5,438 and $5,626, respectively.

(In Thousands of Dollars)

Note 6: Investments

Investments at December 31 consisted of the following:

	Available for Sale				Held to Maturity	
	Cost	Unrealized Gains	Unrealized Losses	Fair Value	Amortized Cost	Total
2022						
Designated short-term investments						
Treasuries and government agency	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000
	$ -	$ -	$ -	$ -	$ 60,000	$ 60,000
Other restricted and designated assets						
Mutual funds	$ 7,813	$ -	$ -	$ 7,813	$ -	$ 7,813
Pension reinvestment	7,302	-	-	7,302	-	7,302
Bank deposits	-	-	-	-	1	1
Certificate of deposit	-	-	-	-	592	592
U.S. government treasury bills	-	-	-	-	7,051	7,051
	$ 15,115	$ -	$ -	$ 15,115	$ 7,644	$ 22,759

	Available for Sale				Held to Maturity	
	Cost	Unrealized Gains	Unrealized Losses	Fair Value	Amortized Cost	Total
2021						
Other restricted and designated assets						
Mutual funds	$ 9,953	$ -	$ -	$ 9,953	$ -	$ 9,953
Pension reinvestment	7,929	-	-	7,929	-	7,929
Bank deposits	-	-	-	-	1	1
Certificate of deposit	-	-	-	-	697	697
U.S. government treasury bills	-	-	-	-	7,387	7,387
	$ 17,882	$ -	$ -	$ 17,882	$ 8,085	$ 25,967

(In Thousands of Dollars)

Note 7: Designated Cash and Cash Equivalents

For the years ended December 31, designated cash and cash equivalents consisted of the following:

	2022	2021
Member revenue subject to refund	$ 17,561	$ 17,561
Generation, Environmental and Insurance Reserve Fund	52,921	112,921
	$ 70,482	$ 130,482

Note 8: Investments in Associated Organizations

Associated conducts business with various cooperatives, including National Rural Utilities Cooperative Finance Corporation (NRUCFC) and CoBank. As a result of these business relationships, Associated holds membership rights in these organizations, which include the right to receive patronage allocations.

Investments in associated organizations at December 31 consisted of the following:

	2022	2021
CoBank patronage capital equity	$ 22,030	$ 21,648
NRUCFC patronage capital equity	4,194	4,182
NRUCFC held-to-maturity securities	1,429	1,562
Other	389	436
	$ 28,042	$ 27,828

Investments in patronage capital equity are considered equity securities without a readily determinable fair value. Patronage capital equity is increased as patronage is allocated to Associated and decreased as patronage is retired and cash received. There were no impairments of patronage capital equity in 2022 or 2021.

At December 31, 2022, future maturities of NRUCFC held-to-maturity securities at amortized cost are as follows: after 1 through 5 years, $666; after 5 through 10 years, $266; and after 10 years, $496. The remaining investments in associated organizations do not have a stated maturity.

(In Thousands of Dollars)

Note 9: Leases

Net Investment in Direct Financing Leases

Associated's leasing activities consist of the leasing of a transmission line and related equipment. The construction of these facilities was completed in 1992 with all costs incurred by Associated. The Construction and Financing Agreement related to the transmission line leases expires in 2028. The leases are classified as direct financing leases as follows:

	2022	2021
Total minimum lease payments receivable	$ 3,519	$ 4,145
Less unearned income	(684)	(924)
Less current portion	(627)	(627)
Net investment in direct financing leases	$ 2,208	$ 2,594

At December 31, 2022, future minimum lease receipts related to direct financing leases for the next five years and thereafter will be as follow:

2023	$ 627
2024	627
2025	627
2026	627
2027	627
Thereafter	384
	$ 3,519

Operating Leases

Associated's operating leases recorded under ASC 842 consist of railcars used in the delivery of coal to the New Madrid and Thomas Hill power plants. These leases expire between the end of 2023 and 2027. Rent expense for all short-term and long-term railcar leases was $3,253 and $2,324 for the years ended December 31, 2022, and 2021, respectively. Rent expense is included in operating expenses on the consolidated statements of operations.

Associated has no material related-party leases. Associated's lease agreements do not contain any material residual value guarantees or material restrictive covenants.

(In Thousands of Dollars)

The consolidated financial statements include the following lease components at December 31, 2022:

		2022
Operating Leases		
Operating leases right-of-use assets	$	3,615
Less accumulated amortization		2,208
Net operating lease right-of-use assets	$	1,407
Operating lease liabilities - current	$	(935)
Operating lease liabilities - noncurrent		(472)
Total operating lease liabilities	$	(1,407)
Operating Leases		
Weighted average remaining lease term (years)		1.66
Weighted average discount rate		4.48%

As of December 31, 2022, Associated has entered into additional operating leases for railcars that have not yet commenced. These operating leases will commence in 2023 with lease terms of two to five years and will have future discounted lease payments of $3,191 in 2023, $3,336 in 2024, $2,903 in 2025, $476 in 2026, and $505 in 2027.

Future minimum lease payments and reconciliation to the consolidated balance sheet at December 31, 2022, are as follows:

		Operating Leases
2023	$	935
2024		472
2025		-
2026		-
2027		-
Thereafter		-
	$	1,407

(In Thousands of Dollars)

Note 10: Deferred Regulatory Debits

Regulatory assets are recorded for expenses that are deferred and will be recovered through rates charged to members in future periods. Such deferrals are made at the discretion of Associated's Board of Directors. Associated does not earn a return on these regulatory assets.

At December 31, deferred regulatory debits consisted of the following regulatory assets:

	2022	2021
Unrealized loss on hedging activities	$ 40,661	$ 24,120
Asset retirement obligations	27,529	18,888
	68,190	43,008
Less current portion of deferred regulatory debits	(10,734)	(4,220)
Long-term deferred regulatory debits	$ 57,456	$ 38,788

Associated's Board of Directors has established a policy to defer unrealized fair value gains and losses associated with hedging activities and recognize in earnings only at the settlement of these instruments (see *Note 17*). The current portion of the deferred loss is included as a current asset on the accompanying consolidated balance sheets.

The costs recognized upon the adoption of the accounting guidance for asset retirement obligations were deferred as a regulatory asset. Associated's Board has also approved a policy for the deferral of depreciation and accretion associated with asset retirement obligations related to coal combustion residual storage facilities (see *Note 4*). These costs are being amortized over the life of the underlying asset. In 2022 and 2021, $9,939 and $5,653, respectively, was deferred under this policy. In 2022 and 2021, $1,297 and $943, respectively, of amortization was recognized.

Note 11: Other Deferred Assets

Other deferred assets are long-term assets that are not otherwise classified as other property and investments or restricted and designated long-term assets.

(In Thousands of Dollars)

At December 31, other deferred assets consisted of the following:

	2022	2021
Receivable associated with derivative assets	$ 51,431	$ 21,619
Preliminary surveys	7,481	6,856
Long-term receivable on New Madrid substation	7,178	7,491
Prepayment of payment in lieu of taxes	1,193	1,671
Other	3,125	2,662
Other deferred assets	$ 70,408	$ 40,299

Associated has derivative assets related to long-term diesel fuel, natural gas, and power swap agreements (*see Note 17*). The long-term receivable associated with these derivative assets was $51,431 and $21,619 at December 31, 2022 and 2021, respectively.

Associated has engaged engineers to perform preliminary surveys on various projects that could result in capital additions. If a capital addition results from the surveys, the costs are included in the capital project costs; otherwise, the survey costs are expensed. Preliminary survey costs were $7,481 and $6,856 at December 31, 2022 and 2021, respectively.

Associated entered into an agreement to engineer, construct, own, operate and maintain a 345/500 kV 750 MVA transformer at a greenfield site adjacent to the New Madrid substation in which two other parties shared equally in the cost of construction. The total construction cost of the substation was $26,947. One party elected to pay its one-third share of the construction cost in 2014. The other party will pay its share of the construction costs over 20 years. The long-term receivable associated with this project was $7,178 and $7,491 at December 31, 2022 and 2021, respectively.

Associated entered into an agreement to make a prepayment of $5,729 for a payment in lieu of taxes. The long-term portion of this payment as of December 31, 2022 and 2021, was $1,193 and $1,671, respectively. The prepayment will be amortized into expense from 2014 through 2026. Amortization of $478 was recognized in both 2022 and 2021.

Note 12: Long-Term Debt

Long-term debt consists of mortgage notes payable to the United States of America acting through the FFB, NRUCFC, and CoBank, as well as others. Substantially all of Associated's assets are pledged as collateral for the borrowings noted in the table below, except those noted as unsecured.

(In Thousands of Dollars)

The terms of the notes are as follows:

	2022	2021
FFB mortgage notes with various maturities, due quarterly through 2052, at a weighted-average rate of 2.68%	$ 971,470	$ 966,619
Private placement notes with various maturities, due quarterly through 2050, at a weighted-average rate of 3.74%	525,214	541,849
CoBank notes with various maturities, due quarterly through 2032, at a weighted-average rate of 6.10%	232,524	154,816
Revolving line of credit due in 2026, at a variable rate of 5.12%	1,000	-
NRUCFC notes payable due annually through 2029, at a weighted-average rate of 6.65%	23,333	26,667
	1,753,541	1,689,951
Less unamortized debt issuance costs	(2,663)	(2,690)
Less current maturities	(72,960)	(69,850)
	$ 1,677,918	$ 1,617,411

In 2022 and 2021, Associated entered into various construction loans with RUS through FFB as follows:

RUS Loan Designation	Origination Year	Loan Amount	Advances 2022	Advances 2021	Available Balance 2022
AE48	2021	$ 78,000	$ 14,370	$ 20,798	$ 42,831
AD48	2020	$ 52,000	6,818	34,090	11,092
AC48	2019	$ 140,000	6,352	72,806	5,882
AA48	2018	$ 29,220	6,820	-	-
Z8	2016	$ 190,836	-	22,474	-
			$ 34,360	$ 150,168	$ 59,805

(In Thousands of Dollars)

At December 31, 2022, Associated had $750,000 of committed lines of credit with the following scheduled expirations:

2024	$ 50,000
2025	100,000
2026	550,000
2027	50,000
	$ 750,000

At December 31, 2022 and 2021, Associated had $1,000 and $0, respectively, outstanding on the lines of credit. The interest rate is a variable rate, reset daily.

In 2022, Associated entered into an agreement with CoBank in the amount of $100,000. The term of the agreement includes a 10-year bullet maturity on the principal, with quarterly interest payments.

At December 31, unamortized debt issuance costs consisted of the following:

	2022	2021
RUS loans through FFB	$ 1,817	$ 1,954
CoBank loans and line of credit agreements	320	183
Private placement notes	526	553
Total unamortized debt issuance costs	$ 2,663	$ 2,690

Annual maturities of long-term debt for the next five years and thereafter are as follows:

2023	$ 72,960
2024	84,064
2025	70,387
2026	72,939
2027	66,467
Thereafter	1,386,724
	$ 1,753,541

The terms of these debt agreements contain, among other provisions, requirements to maintain a minimum level of total margins and equities, current ratio and margin for interest ratio, and other financial ratios. Associated is in compliance with the terms of these agreements.

(In Thousands of Dollars)

Note 13: Deferred Regulatory Credits

Regulatory credits are established for obligations to Associated's members based on actions of Associated's Board of Directors. These amounts will be included in income in the year they are applied to future costs or otherwise returned to members.

At December 31, deferred regulatory credits consisted of the following:

	2022	2021
Generation, Environmental and Insurance Reserve Fund	$ 151,621	$ 152,971
Member revenue subject to refund	17,561	17,561
Deferred unrealized gain on hedging activities	86,906	45,758
	256,088	216,290
Less current portion of deferred regulatory credits	(36,825)	(25,489)
Long-term deferred regulatory credits	$ 219,263	$ 190,801

Associated's Board of Directors established a fund for costs to comply with federal environmental legislation, future generation expenditures, uninsured losses, and unplanned power supply cost. This fund is referred to as the Generation, Environmental and Insurance Reserve Fund (GEIF). Between 2013 and 2018, Associated's Board of Directors designated $45,000 of this fund to be used for the purchase of City of New Madrid's power plant. This amount will be amortized into income over the depreciable life of the asset. In both 2022 and 2021, Associated amortized $1,350 into income, which is included in member revenue in the accompanying consolidated financial statements. Cash or investments are segregated for this fund until a designated use has been identified by Associated's Board of Directors (see *Notes 1 and 7*). The current portion of this fund was $1,350 at December 31, 2022 and 2021.

A regulatory credit has been established by Associated's Board of Directors for member revenue designated as subject to future refund in the form of lower rate requirements. In 2022 and 2021, Associated did not defer any revenue. In 2021, Associated's Board of Directors directed the recognition of $130,000 of previously deferred revenue in response to the expenses related to Winter Storm Uri.

Associated's Board of Directors has established a policy to defer unrealized fair value gains and losses associated with hedging activities and recognize in rates only the current period settlement of these instruments (see *Note 17*). The current portion of the deferred gain was $35,475 and $24,139 at December 31, 2022 and 2021, respectively.

Note 14: Pension and Other Postretirement Benefits

Defined Benefit Plan

Associated participates in the RS Plan. The legal name of the plan is the NRECA Retirement Security Plan; the employer identification number is 53-0116145, and the RS Plan number is 333. Plan information is available publicly through the annual Form 5500. The RS Plan year is January 1 through December 31. The RS Plan is a defined benefit pension plan qualified under Section 401 and tax-exempt under Section 501(a) of the Internal Revenue Code. Contributions are required by a collective bargaining agreement that expires on June 30, 2024. Employees hired on or after January 1, 2014, are not eligible to participate in the RS Plan.

In February 2013, Associated elected to make a prepayment of $37,087 to the RS Plan. Associated amortized this amount over 10 years. The prepayment was fully amortized at December 31, 2022. Associated's total contributions to the RS Plan in 2022 and 2021 represented less than 5 percent of the total contributions made to the RS Plan by all participating employers. Associated's total contribution to the RS Plan was $10,475 and $10,746 in 2022 and 2021, respectively.

For the RS Plan, a "zone status" determination is not required and, therefore, not determined under the *Pension Protection Act of 2006* (PPA). In addition, the accumulated benefit obligations and plan assets are not determined or allocated separately by individual employer. In total, the RS Plan was more than 80 percent funded on January 1, 2022 and 2021, based on the PPA funding target and PPA actuarial value of assets on those dates. Because the provisions of PPA do not apply to the RS Plan, funding improvement plans and surcharges are not applicable. Future contribution requirements are determined each year as part of the actuarial valuation of the RS Plan and may change as a result of plan experience.

Defined Contribution Plan

Substantially all of the employees of Associated participate in the NRECA Select RE Plan 401(k) Plan (the 401(k) Plan). For employees hired before January 1, 2014, Associated contributes amounts not to exceed 2.5 percent of the employee's full salary for nonrepresented employees and base pay for International Brotherhood of Electrical Workers members, dependent on the employee's level of participation. For employees hired on or after January 1, 2014, Associated contributes amounts ranging from 6.0 percent to 13.0 percent depending on the employee's contribution to the 401(k) Plan and date of hire. Associated contributed $4,861 and $4,582 to the 401(k) Plan in 2022 and 2021, respectively.

Deferred Compensation Plan

Associated has a deferred compensation plan that permits directors and certain employees to defer a portion of their compensation and accrue earnings on the deferred amounts. The assets of the plan are held in a rabbi trust and are included in other restricted assets and other deferred liabilities.

(In Thousands of Dollars)

Health Care Plan

Associated provides noncontributory health care benefits to its retired United Mine Workers of America (UMWA) employees and their eligible dependents (UMWA Plan). These employees became eligible for benefits upon reaching age 55 while working for Associated and having 20 years of credited service at retirement. Also eligible were UMWA retirees who had 10 years of credited service and were age 55 or older at termination from Associated. The UMWA Plan is funded as benefit payments are made.

The UMWA Plan qualifies for the federal subsidy for prescription drug coverage under the *Medicare Prescription Drug, Improvement and Modernization Act of 2003*. As such, an assumption regarding the subsidy is included in the actuarial valuation of the UMWA Plan. The effect of the subsidy on the accumulated postretirement benefit obligation as of December 31, 2022 and 2021, was a decrease of $1,567 and $2,283, respectively, which serves to reduce the net periodic cost by $37 and $77, respectively, annually.

	2022	2021
Change in accumulated benefit obligation		
Accumulated benefit obligation, beginning of year	$ 33,715	$ 41,902
Interest cost	914	920
Actuarial gain	(10,326)	(2,953)
Benefit payments	(1,971)	(2,268)
Medicare subsidy	108	114
Accumulated benefit obligation, end of year	$ 22,440	$ 37,715
Funded status		
Accumulated benefit obligation	$ (22,440)	$ (37,715)
Net liability recognized	$ (22,440)	$ (37,715)
Net periodic benefit cost		
Interest cost	$ 914	$ 920
Amortization of actuarial loss	1,030	1,370
Total net periodic benefit cost	$ 1,944	$ 2,290

(In Thousands of Dollars)

	2022	2021
Amounts recognized in the accompanying consolidated balance sheets consist of		
Other current and accrued liabilities	$ (1,953)	$ (2,317)
Other deferred liabilities	(24,488)	(35,398)
	$ (26,441)	$ (37,715)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial loss	$ 3,442	$ 14,798
Weighted-average assumptions used to determine benefit obligation at December 31		
Discount rate	4.90%	2.50%
Weighted-average assumptions used to determine net periodic benefit cost for the year ended December 1		
Discount rate	2.50%	2.26%

For measurement purposes, a 6.81 percent annual rate of increase in medical and prescription cost trend rates was assumed for 2023 and 2024. The annual medical trend rate decreases over time to the ultimate trend rate after 2076 of 4.14 percent. The annual trend rate for vision expense was assumed to increase 3.0 percent per year through 2076. A 1.0 percent increase in assumed health care cost trend rates would increase total service and interest costs by $101 and increase the postretirement benefit obligation by $2,398. A 1.0 percent decrease in assumed health care cost trend rates would decrease total service and interest costs by $87 and decrease the postretirement benefit obligation by $2,194.

Associated expects $75 of the actuarial loss to be recognized as a component of net periodic benefit cost in 2023.

Associated contributed $1,971 and $2,268 in 2022 and 2021, respectively, to the postretirement benefit plan. Based on actuarial projections, Associated expects to contribute $1,953 to the postretirement benefit plan in 2023. No discretionary contributions are planned in 2023.

(In Thousands of Dollars)

Estimated future benefit payments and subsidy receipts, which reflect expected future service, as appropriate, for each of the next five years and thereafter are as follows:

	Benefit Payments	Subsidy Receipts
2023	$ 2,102	$ (149)
2024	2,159	(146)
2025	2,205	(142)
2026	2,230	(139)
2027	2,251	(135)
2028-2031	10,852	(605)
	$ 21,799	$ (1,316)

Executive Benefit Restoration Plan

The executive benefit restoration plan (EBR plan) was adopted by Associated effective January 1, 2016. The plan is an unfunded and unsecured plan sponsored and maintained by Associated primarily for the purpose of providing deferred compensation for a select group of management or highly compensated employees of Associated. The plan is a 'top hat' plan under the *Employee Retirement Income Security Act of 1974* (ERISA) and therefore exempt from the participation, vesting, funding and fiduciary responsibility rules of ERISA. The plan year is January 1 through December 31.

Eligibility in the plan is limited to the chief executive officer of Associated, management reporting directly to the chief executive officer and any other key employee recommended by the chief executive officer for participation in the plan and approved by the Board, subject to certain exclusions.

(In Thousands of Dollars)

The Board, at its sole discretion, may amend any or all provisions of the plan at any time by written instrument identified as an amendment effective as of a specified date. The plan may be terminated in whole or in part at any time at the sole discretion of the Board, so long as such termination is consistent with the requirements of section 409(A) of the Internal Revenue Code.

	2022	2021
Change in accumulated benefit obligation		
Accumulated benefit obligation, beginning of year	$ 2,047	$ 1,228
Service cost	110	129
Interest cost	52	56
Actuarial gain	(887)	(135)
Impact of amendments on projected benefit obligation	-	769
Accumulated benefit obligation, end of year	$ 1,322	$ 2,047
Funded status		
Accumulated benefit obligation	$ (1,322)	$ (2,047)
Net liability recognized	$ (1,322)	$ (2,047)
Net periodic benefit cost		
Service cost	$ 110	$ 129
Interest cost	52	56
Amortization of prior service cost	53	53
Amortization of actuarial loss	2	32
Total net periodic benefit cost	$ 217	$ 270

(In Thousands of Dollars)

	2022	2021
Amounts recognized in the accompanying consolidated balance sheets consist of		
Other deferred liabilities	$ (1,321)	$ (2,047)
	$ (1,321)	$ (2,047)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial loss	$ 459	$ 1,401
Weighted-average assumptions used to determine benefit obligation at December 31		
Discount rate	4.97%	2.93%
Weighted-average assumptions used to determine net periodic benefit cost for the year ended December 1		
Discount rate	2.93%	2.73%

Associated recorded a liability at December 31, 2022 and 2021 of $1,321 and $2,047, respectively, for the projected benefit obligation.

Note 15: Income Taxes

Associated is subject to federal and state income taxes on nonpatronage-sourced taxable income. A detail of the provision for income taxes in 2022 and 2021 is as follows:

	2022		2021	
	Current	Deferred	Current	Deferred
Federal	$ -	$ (2,734)	$ -	$ 27,787
State	-	(486)	-	4,935
Change in valuation allowance	-	3,220	-	(32,722)
Income taxes credited	$ -	$ -	$ -	$ -

Deferred income taxes reflect the net tax effect of temporary differences between the financial statement and tax bases of assets and liabilities. Associated's temporary differences relate primarily to operating loss carryforwards, accelerated depreciation for tax purposes and other reserves deductible for tax purposes only when paid.

(In Thousands of Dollars)

The components of the net deferred income tax asset at December 31 are as follows:

	2022	2021
Deferred tax asset		
Net operating loss carryforwards	$ 363,932	$ 368,635
Mine reserves	1,786	1,829
Postretirement benefits	1,637	1,671
Interest expense carryforward	11,111	8,807
ROU asset	100	-
Other	3,615	3,890
Total deferred tax asset	382,181	384,832
Deferred tax liability		
Utility Plant	(23,120)	(22,651)
ROU liability	(100)	-
Total deferred tax liability	(23,220)	(22,651)
Valuation allowance	(358,961)	(362,181)
Net deferred tax asset	$ -	$ -

A valuation allowance of $358,961 has been established primarily to reflect net operating loss carryforwards estimated to expire before utilization or not be used. The valuation allowance had a net decrease of $3,220 in 2022.

(In Thousands of Dollars)

Associated has federal net operating loss carryforwards for income tax purposes of $1,526,553, incurred as of December 31, 2022, which are available to offset future taxable income in varying amounts. If not utilized, $1,030,907 of these loss carryforwards expire between 2023 and 2037. In 2022, $51,834 of the loss carryforwards expired.

NOL Origination	NOL Carryforward	NOL Expiration	NOL Carryforward Period	Offset
2003-2017	$ 1,030,907	2023-2037	Twenty years	100% taxable income
2018-2020	314,587	None	Indefinite	100% taxable income
2021-2022	181,059	None	Indefinite	80% taxable income
	$ 1,526,553			

Associated evaluates and accounts for uncertainty in income taxes in accordance with the authoritative accounting guidance for income taxes. This guidance outlines the requirements for the recognition and measurement of uncertainty in income tax positions. At December 31, 2022 and 2021, Associated did not have any unrecognized tax benefits.

Associated is subject to taxation in the U.S. and various states based on taxable income. As of December 31, 2022, tax years 2019, 2020, and 2021 are subject to examination by the tax authorities. With few exceptions, as of December 31, 2022, Associated is no longer subject to federal and state examinations by tax authorities for years before 2019. There are no ongoing audits at this time.

Note 16: Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value measurements must maximize the use of observable inputs and minimize the use of unobservable inputs. There is a hierarchy of three levels of inputs that may be used to measure fair value. Level 1 inputs include observable inputs, such as unadjusted quoted prices in an active market for identical assets or liabilities. Level 2 inputs are unadjusted quoted prices in an active market for similar assets and liabilities that are either directly or indirectly observable. Level 3 inputs are unobservable inputs for the assets and liabilities for which little or no market data exist, therefore requiring Associated to develop its own estimates of fair value.

(In Thousands of Dollars)

Associated measures certain assets and liabilities at fair value on a recurring basis. The following tables present information regarding the method of valuation for assets and liabilities as of December 31:

		Fair Value Measurements Using		
	Fair Value	**Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
2022				
Assets				
Other restricted and designated assets	$ 15,115	$ 15,115	$ -	$ -
Derivative assets	86,906	-	86,906	-
Liabilities				
Derivative liabilities	42,120	-	42,120	-
2021				
Assets				
Other restricted and designated assets	17,882	17,882	-	-
Derivative assets	45,758	-	45,758	-
Liabilities				
Derivative liabilities	24,198	-	24,198	-

Available-for-sale securities reflected in Level 1 of the valuation hierarchy are measured at fair value each reporting period using quoted market prices on listed exchanges. The derivative instruments reflected in Level 2 of the valuation hierarchy include fixed-to-floating commodity swaps, a floating-to-fixed interest rate swap and financial energy transactions on futures and exchange-traded options conducted within the Intercontinental Exchange (ICE) platform which are valued based on published indexes for the respective contracts. There were no transfers between Level 1 and Level 2 in 2022 or 2021.

(In Thousands of Dollars)

The estimated fair values of Associated's financial instruments were as follows at December 31:

	2022		2021	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Other restricted and designated assets	$ 15,115	$ 15,115	$ 17,882	$ 17,882
Derivative assets	86,906	86,906	45,758	45,758
Derivative liabilities	42,120	42,120	24,198	24,198

The method used to estimate the fair value of Associated's long-term debt and investments is based on quoted market prices for the same or similar instruments or on the current rates offered to Associated for the debt of the same maturity. The carrying amounts of cash and cash equivalents, accounts receivable and accounts payable approximate fair value at December 31, 2022.

Note 17: Derivative Instruments and Hedging Activities

Associated uses derivative instruments to manage the risks associated with changes in interest rates and the price of diesel fuel and natural gas used in the operation of its generating resources. Contracts are evaluated under the guidelines of the accounting guidance for derivatives and hedging activities. All contracts that meet the definition of derivative instruments are recorded at fair value as an asset or liability. Fair value is determined based on indexes outlined in the derivative contracts or readily available equivalents. In 2009, the Board established a policy to defer changes in fair value of derivative instruments as a regulatory item to be recovered through future rates.

In November 2007, Associated entered into a floating-to-fixed interest rate swap. Changes in fair value were deferred by action of the Board of Directors as a regulatory item to be recovered through future rates. Only current period settlements of this instrument are included in earnings, which resulted in charges to interest expense of $1,833 and $2,478 in 2022 and 2021, respectively. An asset that represents the amount to be recovered through future rates is included in deferred regulatory debits (*see Note 10).*

In November 2022, Associated entered into a series of floating-to-fixed interest rate swaps to act as fair value hedges with respect to a portion of Associated's anticipated long-term debt issuances in fiscal years 2023 through 2027. Changes in fair value were deferred by action of the Board of Directors as a regulatory item to be recovered through future rates. There were no current period settlements on these instruments in 2022. An asset that represents the amount to be recovered through future rates is included in deferred regulatory debits (*see Note 10).*

(In Thousands of Dollars)

Associated has entered into a series of diesel fuel swap agreements that are designed to manage the fuel price risk related to Associated's coal delivery costs through 2025 and a series of natural gas and energy swap agreements that are designed to limit exposure to fluctuation in natural gas prices through 2030. Realized gains and losses on settled derivatives are recognized in fuel costs. In 2022 and 2021, settlements decreased fuel costs by $77,956 and $68,611, respectively. Unrealized fair value gains and losses are recorded in deferred regulatory debits (*see Note 10*) and deferred regulatory credits (*see Note 13*).

The classification of derivative instruments is as follows at December 31:

		2022	2021
Derivative Assets	Balance Sheet Location		
Gas and power hedges - long term	Other deferred assets	$ 47,756	$ 19,408
Diesel hedges - long term	Other deferred assets	3,675	2,211
Gas and power hedges - current	Other current assets	29,177	20,499
Diesel hedges - current	Other current assets	6,298	3,640
	Total derivative assets	$ 86,906	$ 45,758
Derivative Liabilities			
Interest rate swap - 2007 bonds - long term	Other deferred liabilities	$ (6,299)	$ (19,801)
Interest Rate Hedge Nov 2022-long term	Other deferred liabilities	(23,112)	-
Gas and power hedges - long term	Other deferred liabilities	(2,508)	(1,513)
Diesel hedges - long term	Other deferred liabilities	(132)	(70)
Interest rate swap - current	Other current and accrued liabilities	(1,500)	(2,160)
Gas and power hedges - current	Other current and accrued liabilities	(8,192)	(518)
Diesel hedges - current	Other current and accrued liabilities	(377)	(136)
	Total derivative liabilities	$ (42,120)	$ (24,198)

Note 18: Commitments and Contingencies

Associated has pledged investments classified as held to maturity for mine reclamation and self-insured workers' compensation purposes. These securities are included in other restricted and designated assets. At December 31, 2022, and 2021, these securities amounted to $8,301 and $8,085, respectively.

As of December 31, 2022, Associated has a commitment to purchase all of its coal requirements through 2025 from one coal supplier using an agreed-upon rate calculation mechanism that adjusts with market prices. Associated also has contracts with certain rail companies whose contracts expire in 2030 to deliver this coal at agreed-upon rates.

Associated has a commitment to pay a base transportation fee to the transporters of gas for the Dell power plant through 2026 and the Chouteau power plant through 2041. Associated paid transportation fees of $10,968 and $9,155 in 2022 and 2021, respectively. Associated's commitment to the transporters of gas at the Dell and Chouteau power plants will be $10,965 annually for 2023 through 2025, $10,004 for 2026, $5,216 annually for 2027 through 2030, and an average of $7,026 annually for 2031 through 2041.

(In Thousands of Dollars)

Associated has entered into various index price, physically settled natural gas contracts through 2023. The 2023 commitments for the Chouteau and Dell power plants are $63,109 and $39,511, respectively, based on the index price at December 31, 2022.

The long-term wholesale electric service contracts with its members require Associated to reimburse each member for the costs of their qualified transmission facilities, including depreciation, interest, and operations and maintenance. Expenses for these contracts in 2022 and 2021 totaled $78,870 and $74,241, respectively. Additionally, Associated is required to reimburse one of its members for deferred costs associated with the member's previous ownership interest in the GRDA Unit 2 coal facility which terminated in May 2016. Expenses related to this agreement were $5,438 and $5,626 for 2022 and 2021, respectively (see *Note 5*).

Projected payments to members for the next five years are:

	Transmission	Generation
2023	$ 84,502	$ 5,519
2024	85,755	5,369
2025	86,694	5,220
2026	87,535	5,070
2027	88,188	4,921

Associated has a commitment to purchase the output from eight wind farms. Associated does not have fixed cost obligations and pays only for the energy produced. These purchases are set at a contracted price for 20 and 25 years from inception of the contract. These contracts expire at various dates between 2027 and 2045. Associated purchased wind power at a cost of $142,919 and $134,795 in 2022 and 2021, respectively.

Associated has a contract with SWPA, effective through April 2031, that entitles Associated to purchase a fixed amount of firm capacity and energy, plus supplemental energy when available. Capacity payments totaled $25,812 for both 2022 and 2021. Energy payments, including supplemental energy, totaled $15,137 and $17,302 for 2022 and 2021, respectively.

(In Thousands of Dollars)

Capacity payments for these contracts for the next five years are projected to be as follows:

2023	$ 26,586
2024	27,384
2025	28,205
2026	29,052
2027	29,923

Note 19: Subsequent Events

Associated evaluates events that occur after the balance sheet date but before the issuance of financial statements to determine if recognition or disclosure of the financial impact of such events is required. There were no events occurring after December 31, 2022, and before February 10, 2023, which is the date the consolidated financial statements were available to be issued, that required recognition or disclosure.

FORV/S

910 E. St. Louis Street, Suite 200 / Springfield, MO 65806
P 417.865.8701 / **F** 417.865.0682
forvis.com

Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Independent Auditor's Report

Board of Directors and Members
Associated Electric Cooperative, Inc.
Springfield, Missouri

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States (*Government Auditing Standards*), the consolidated financial statements of Associated Electric Cooperative, Inc. and its wholly owned subsidiaries (Associated), which comprise the consolidated balance sheet as of December 31, 2022, and the related consolidated statements of revenues and expenses, comprehensive income, patronage capital and other equities, and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated February 10, 2023.

Report on Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered Associated's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of Associated's internal control. Accordingly, we do not express an opinion on the effectiveness of Associated's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's consolidated financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether Associated's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the consolidated financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

FORVIS, LLP

Springfield, Missouri
February 10, 2023