Powering what's possible

2022 ANNUAL REPORT

GREAT RIVER ENERGY.

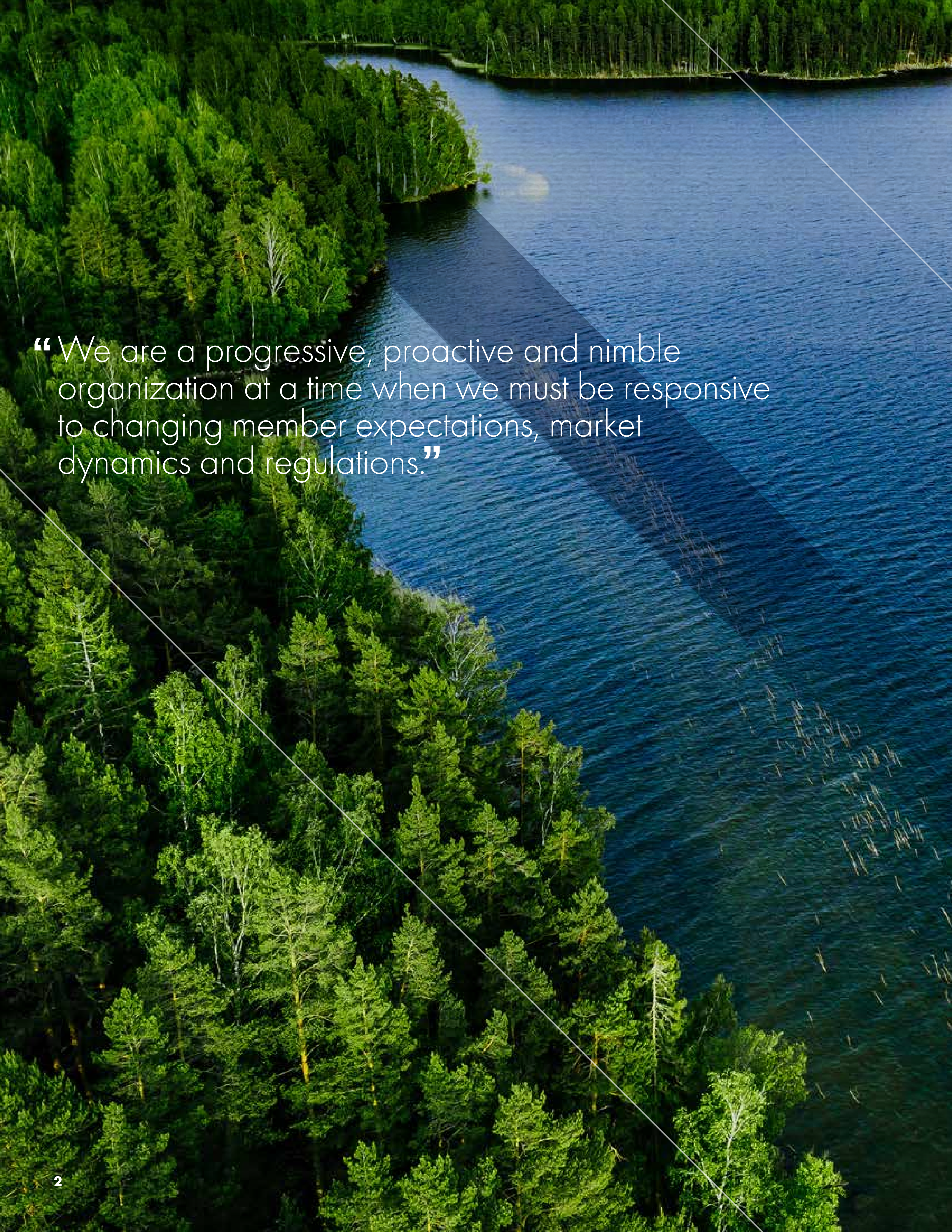

Arrowh
North Itasca
Lake Country Power
Co-op
Light &
Power
Itasca-Mantrap
Lake Region
Todd-
Wadena
Crow Wing
Mille Lacs
Runestone
Stearns
East Central
Energy
Agralite
Kandiyohi
Meeker
Wright-
Hennepin
McLeod
Minnesota
Valley
Dakota
Redwood
Brown
Gooodhue
BENCO
Steele-
Waseca
South Central
Nobles
Federated

ead

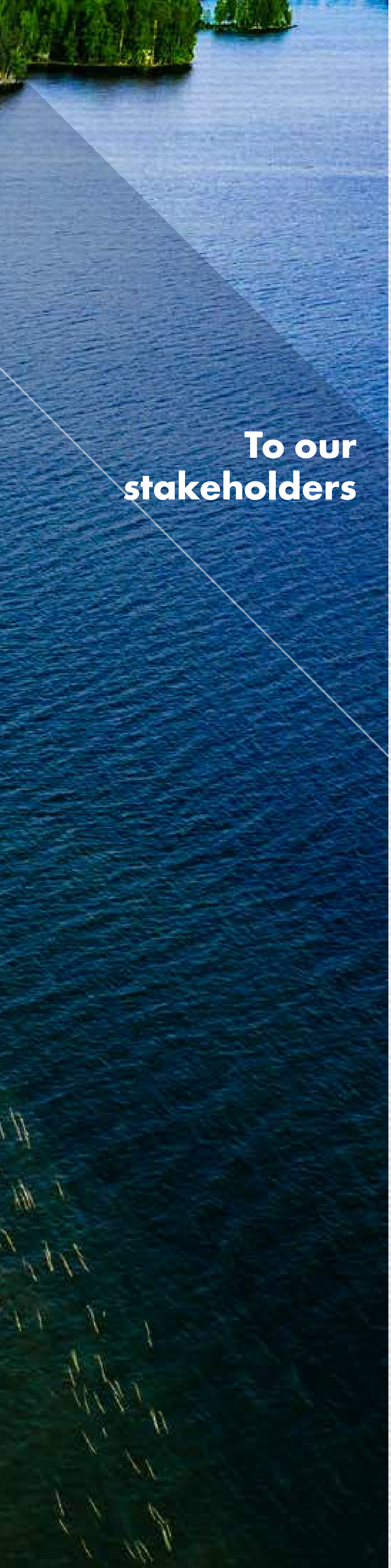
Great River Energy and its member-owners are not-for-profit electric cooperatives that are guided by the seven cooperative principles:

Open and voluntary membership
Democratic member control
Members' economic participation
Autonomy and independence
Education, training and information
Cooperation among cooperatives
Concern for community

Contents



"We are a progressive, proactive and nimble organization at a time when we must be responsive to changing member expectations, market dynamics and regulations."



To our stakeholders

Bob Bruckbauer
Board Chair

David Saggau
President and Chief Executive Officer

Great River Energy delivered very strong financial and operational results in 2022, even as our industry and our cooperative experienced rapid change.

We have been successful year after year due to our focus on what is most important: our membership.

Every decision, every plan and every strategy is guided by our commitment to act in the best interests of our members through the lens of our shared cooperative principles.

This approach allows us to address challenges proactively and take early action. As a result, Great River Energy is rapidly decarbonizing, our transmission system remains reliable and our wholesale electricity rates are well below the regional average.

Important changes in 2022

Great River Energy is a much different organization that it was a year ago. We sold our flagship power plant, added renewable resources, launched a regional transmission project and began a new customer arrangement with a longtime member. Our power supply portfolio continues to evolve and we are leveraging our resources in unique ways. As part of the sale of our largest coal-based power plant, we retained access to an important electric transmission system. The 400-megawatt interconnection point is planned to deliver wind energy just west of the Twin Cities metro area at a time when connecting renewable projects is challenging.

When the Midwest grid operator announced the need for more than $10 billion in transmission enhancements, Great River Energy secured investment opportunities to minimize the costs to members. Great River Energy is a partner in the development of the Northland Reliability Project, a 150-mile transmission line that will support grid reliability and resilience as the regional power system continues to evolve.

The cooperative way

Cooperatives are not-for-profit organizations that operate at cost, only collecting enough revenue to run the business and meet their financial obligations. When a cooperative experiences financial success, it returns those dollars to members.

The past year was marked with periods of uncertainty in the energy markets; however, Great River Energy's resources performed well. In fact, strong financial results allowed Great River Energy to issue $38 million in bill credits throughout the year. We also returned $25 million in patronage capital payments to member-owners.

Great River Energy and our members are well positioned to respond to the changes in our industry while continuing to provide reliable, affordable and environmentally responsible energy.

Our resources

To provide wholesale electric service across most of Minnesota and into Wisconsin, Great River Energy depends on a carefully planned collection of transmission lines and power supply resources. These assets play an important role in providing reliable, affordable and environmentally responsible energy.

Transmission

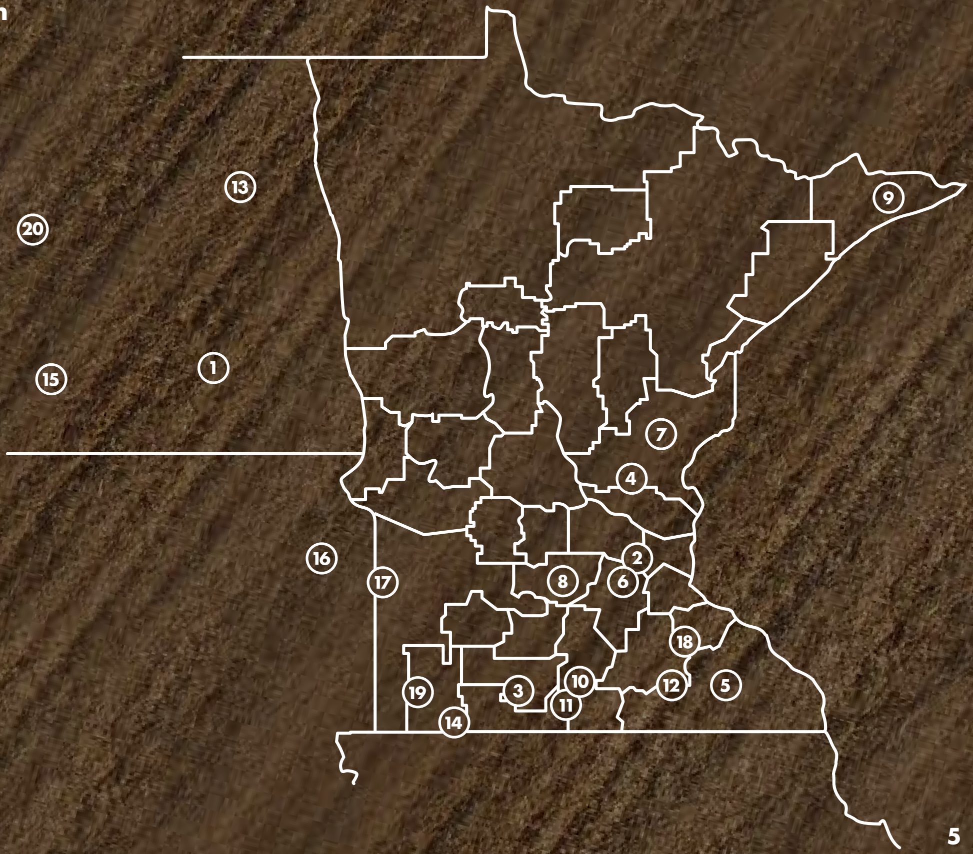
500 kilovolt (kV)	345 kV	230 kV	161 kV	115 kV	69 kV
70 Miles	75 Miles	524 Miles	46 Miles	596 Miles	3,086 Miles

Power supply

1. **Spiritwood Station**
Generating capability: 99 MW
Fuel: DryFine lignite coal and natural gas
2. **Elk River Peaking Station**
Generating capability: 230 MW
Fuel: Natural gas; backup: fuel oil
3. **Lakefield Junction Peaking Station**
Generating capability: 630 MW
Fuel: Natural gas; backup: fuel oil
4. **Cambridge Peaking Station**
Generating capability: 217 MW
Fuel: Fuel oil (unit 1), and natural gas (unit 2)
5. **Pleasant Valley Peaking Station**
Generating capability: 487 MW
Fuel: Natural gas; backup: fuel oil
6. **St. Bonifacius Station**
Generating capability: 70 MW
Fuel: Fuel oil
7. **Rock Lake Station**
Generating capability: 29 MW
Fuel: Fuel oil
8. **Maple Lake Station**
Generating capability: 29 MW
Fuel: Fuel oil
9. **Arrowhead Emergency Generating Station**
Generating capability: 18 MW
Fuel: Fuel oil
10. **Trimont Wind**
Purchase: 105 MW
11. **Elm Creek Wind**
Purchase: 99 MW
12. **Prairie Star Wind**
Purchase: 100 MW
13. **Ashtabula II Wind**
Purchase: 51 MW
14. **Endeavor I Wind**
Purchase: 100 MW
15. **Emmons-Logan Wind**
Purchase: 200 MW
16. **Deuel Harvest Wind**
Purchase: 200 MW
17. **Buffalo Ridge Wind**
Purchase: 105 MW

Planned wind resources

18. **Dodge County Wind**
Purchase: 259 MW
19. **Three Waters Wind**
Purchase: 207 MW
20. **Discovery Wind**
Purchase: 400 MW



Other renewable energy

200 MW (summer) from Manitoba Hydro.
12 MW from two wind farms.
Approx. 3 MW from 20 solar installations.

Generating capability based on maximum nameplate capacity not accounting for transmission constraints.

Serving members in new ways

Great River Energy's power supply evolution is the result of business decisions that were driven by economics and strategy.

Great River Energy took a significant step in 2022 as the cooperative sold its largest coal-based power plant and the high-voltage, direct-current (HVDC) transmission system that delivered the plant's electricity to Minnesota.

As part of the sale, Great River Energy secured rights to interconnect a large, 400-megawatt renewable energy project to the HVDC system. The Discovery Wind project, expected to reach commercial operation in 2025, will deliver renewable energy just west of the Twin Cities area.

These measures have Great River Energy well positioned as a new state law requires electric utilities to serve 100% of retail electric sales with technology that does not emit carbon dioxide by 2040.

Rise of renewables

2000

Chandler I Wind becomes operational with three turbines in Murray County, Minnesota.

2005

Great River Energy signs an agreement for its first large-scale wind project, the 100-MW **Trimont Wind Farm.**

2010

Great River Energy's first North Dakota wind project comes online with **34 wind turbines** in Griggs and Steele counties.

2014

Great River Energy builds **19 solar installations** throughout Minnesota to produce energy from the sun and learn about the growing electric technology.

2017

Great River Energy achieves the state of Minnesota's renewable energy standard of **25% eight years ahead of schedule.**

2023

Great River Energy adds more than 305 MW of nameplate generating capacity with the addition of the **Deuel Harvest** and **Buffalo Ridge wind farms.**

A responsible partner

Cooperatives take pride in being good neighbors in the communities where they serve and operate facilities as well as doing what's right for their employees.

Great River Energy was again certified as a Great Place to Work in 2022, an honor given to companies whose employees report a positive working experience. Nearly 90% of employees said Great River Energy is a great place to work — that's 31 points higher than the average U.S. company. The cooperative also earned the title of "Healthiest Employer" after achieving a very high ranking among midsize Minnesota employers.

Great River Energy provides charitable contributions to nonprofits, operates scholarship programs and sponsors events that bring people together. The cooperative also works with its member-owners to attract and retain business activity and jobs where its members live.

Through wholesale electric service and community programs, Great River Energy strives to support its member-owners, contribute to sustainable communities and deliver on its mission to provide affordable, reliable energy in harmony with a sustainable environment.

Ethanol business sold

A biofuels enterprise of which Great River Energy was the majority owner was sold in 2022.

Great River Energy's ownership of Midwest AgEnergy Group, LLC served its members well for many years. After the sale of Coal Creek Station, however, the cooperative had less of a strategic interest in ethanol biorefineries.

Maintaining a stable electric system

Extreme weather in the summer and winter posed a challenge to the electric grid, but Great River Energy's system performed well thanks to its experienced team and the ability to reduce electric demand at critical moments.

On several occasions, Great River Energy deployed "demand response" resources, which strategically reduce electricity use to maintain the health of the grid and avoid high power market prices.

This is an important component of the cooperative's strategy to use the grid efficiently and economically by reducing demand during periods of high stress — such as hot-weather days — and shifting energy consumption to off-peak times.

By calling on its demand response resources in the summer of 2022, Great River Energy reduced hundreds of megawatts of electricity demand and avoided making costly market purchases — ultimately saving members upwards of $2 million.

An evolving membership

Great River Energy finalized agreements required for its largest member, Connexus Energy, to begin a new path forward as a customer.

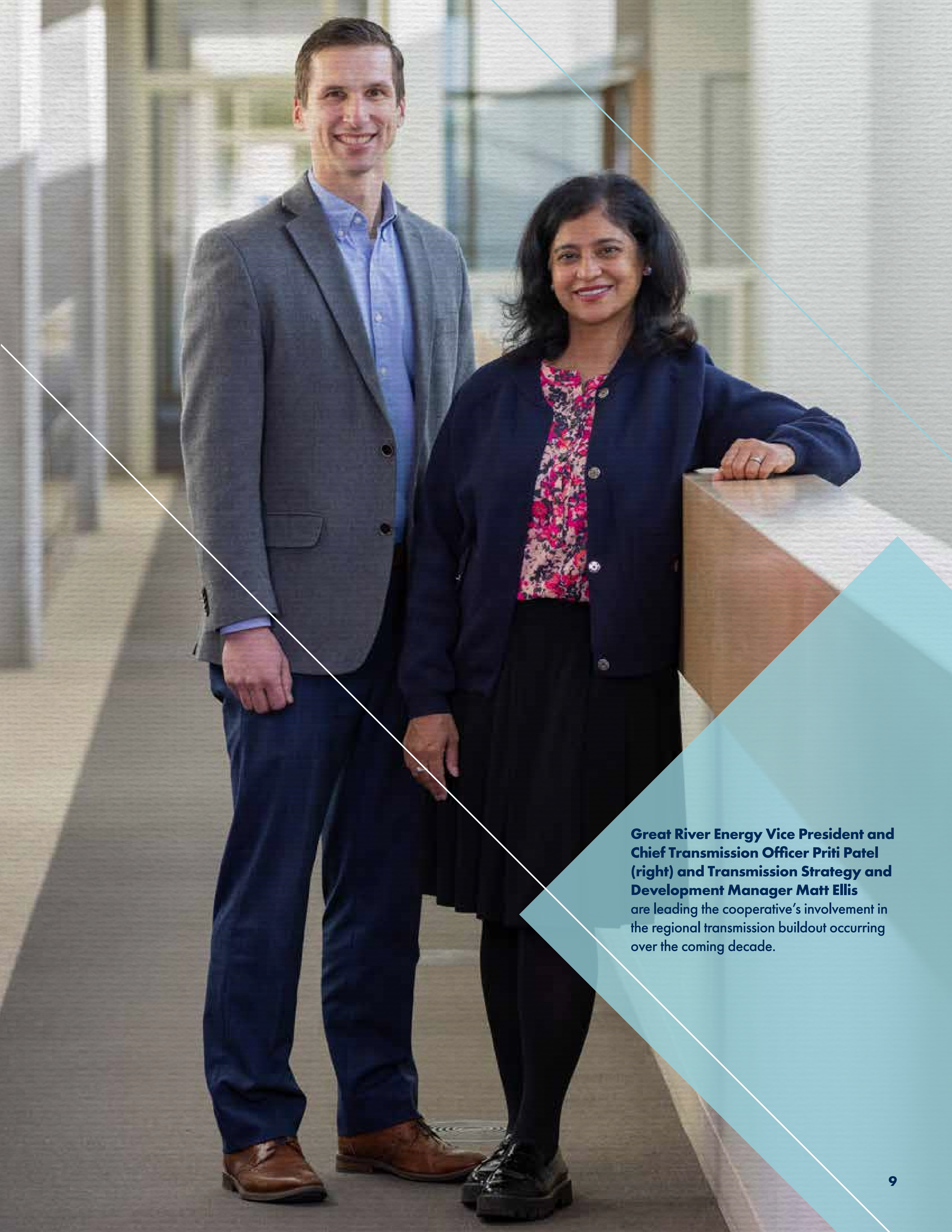
Great River Energy will continue to provide transmission service and supply wholesale energy to Connexus Energy under a contractual framework that allows Connexus Energy to secure more of its own power supply resources.

Transmission expansion underway

Great River Energy is a partner on a critical high-voltage transmission project that will support grid reliability and resilience in the Upper Midwest as the regional electric system continues to evolve.

Known as the Northland Reliability Project, the 150-mile line between the Iron Range and central Minnesota is one of the transmission projects planned to invest in electric reliability as more low-cost renewable energy is brought online, existing power plants are retired, electrification continues to grow and extreme weather events become more frequent.

Subject to regulatory approvals, the transmission line is estimated to be in service by 2030.



Great River Energy Vice President and Chief Transmission Officer Priti Patel (right) and Transmission Strategy and Development Manager Matt Ellis are leading the cooperative's involvement in the regional transmission buildout occurring over the coming decade.

2022 Financials

Financial Highlights

(DOLLARS IN MILLIONS)	2022	2021	Change
OPERATIONS			
Revenues	$ 1,101.3	$ 1,030.2	$ 71.1
Purchased power	$ 447.9	$ 194.8	$ 253.1
Fuel	$ 94.2	$ 211.7	$ (117.5)
Operation and maintenance	$ 253.5	$ 291.2	$ (37.7)
Property and other taxes	$ 17.0	$ 25.0	$ (8.0)
Depreciation and amortization	$ 152.6	$ 171.4	$ (18.8)
Interest expense	$ 123.9	$ 119.7	$ 4.2
Other income	$ 10.8	$ 6.6	$ 4.2
Nonutility operations, excluding noncontrolling interest	$ (3.2)	$ 23.9	$ (27.1)
Net margin attributable to GRE	$ 19.8	$ 46.9	$ (27.1)
FINANCIAL POSITION			
Electric plant	$ 2,838.4	$ 2,721.6	$ 116.8
Utility plant - net	$ 1,781.4	$ 1,894.9	$ (113.5)
Deferred charges	$ 923.4	$ 906.2	$ 17.2
Derivative instruments—noncurrent	$ 355.1	$ -	$ 355.1
Cash and cash equivalents	$ 352.6	$ 238.9	$ 113.7
Assets held for sale	$ -	$ 214.5	$ (214.5)
Total assets	$ 3,817.0	$ 3,814.0	$ 3.0
Regulatory Liabilities	$ 398.7	$ 50.9	$ 347.8
Long-term obligations	$ 2,134.2	$ 2,181.3	$ (47.1)
Members' capital	$ 690.7	$ 697.0	$ (6.3)
Equity to capitalization ratio	23.1%	23.2%	-0.1%

GREAT RIVER ENERGY

Financial Discussion and Analysis

Great River Energy (GRE) delivered very strong financial results in a year that was shaped by transformative transactions and challenging market conditions. In 2022, GRE sold Coal Creek Station and the high-voltage, direct current (HVDC) system, signed a contract with its largest member-owner on a transformative new customer contract, and sold its ownership interest in Midwest AgEnergy Group, LLC (MAG). Despite challenging and turbulent economic conditions, GRE successfully closed these transactions and generated consistently positive margins which allowed the return of $38.0 million of bill credits to its members throughout the year. Additionally, GRE returned $25.0 million of patronage capital to its members in 2022 and plans to return another $25.0 million in 2023. Utility operating revenues ended the year at $1,101.3 million, which was $71.1 million higher than 2021. The increase was driven by strong member sales and an increase in non-member revenue due to consistently higher energy and capacity market prices in the MISO market. These elevated MISO market prices also resulted in an overall increase in total operating expenses in 2022.

Net margin attributable to GRE for 2022 was $19.8 million. Without the member bill credits, GRE's 2022 margin would have been $53.9 million. Negative actual variances versus budget from net MISO market activity resulted in a power cost adjustment (PCA) charge of $18.7 million to GRE's members for 2022. The strong financial performance of 2022 held GRE's equity to capitalization ratio stable at 23.1% at the end of the year. While the transformative transactions have changed the composition of GRE's financial statements, they remain solid and positively position the cooperative for the future.

Margins

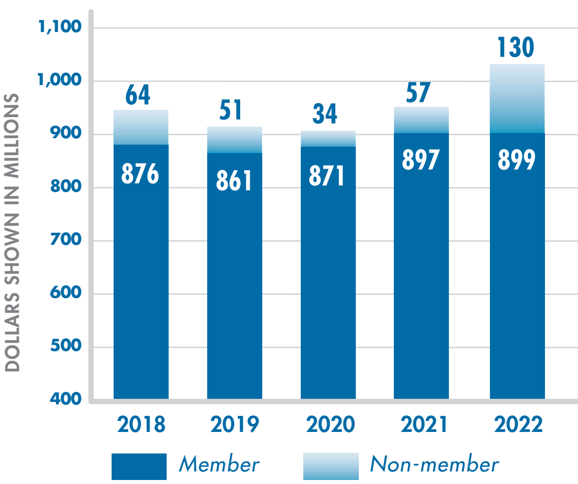
Net margin attributable to GRE for the year ended December 31, 2022, was $19.8 million and includes the net loss from Midwest AgEnergy Group (MAG) and other equity method investments of $3.2 million. This compares to a budget of $23.0 million for 2022. GRE's indenture requires the maintenance of a margin-for-interest (MFI) ratio of 1.10x, excluding the operating results of subsidiaries and equity method investments. GRE's net utility margin, which is used to calculate the MFI ratio, was $23.0 million for 2022, resulting in an MFI ratio of 1.19x. GRE's board of directors targeted a debt service coverage (DSC) ratio of 1.10x when setting member rates for 2022. GRE's 2022 operations produced a DSC ratio of 1.10x.

Electric Revenue

Electric revenue increased $74.7 million or 7.8% to $1,028.7 million in 2022 from $954.0 million in 2021. Of the $74.7 million increase only $1.9 million was due to electric revenue from member cooperatives. The increase in member sales was driven by member demand and energy unit sales from all-requirements members that was 4.9% and 3.1% higher than 2021, respectively. This was due to strong demand and energy sales over much of the year, particularly during the summer months, which contributed to GRE's ability to provide a member bill credit in 2022. With the sale of Coal Creek Station and the HVDC system during 2022, several of GRE's fixed-requirement members reduced their purchases from GRE. This resulted in a decrease of $12.8 million compared to 2021. Also offsetting the overall 2022 increase was the impact of the $18.7 million PCA charge. By comparison, GRE had PCA charges of $46.9 million and $8.3 million in 2021 and 2020, respectively. The PCA allows GRE to credit or collect differences between actual and budgeted results in MISO market activity, purchased power, non-member revenue, and fuel. The 2022 PCA charge was primarily due to unfavorable budget variances in MISO market activity, offset partially by favorable budget variances in non-member sales, purchase power, fuel, and member unit sales.

Electric revenue from non-members increased $72.8 million or 128.6% to $129.4 million in 2022 from $56.6 million in 2021. This was driven by a $25.9 million increase in MISO market energy revenue due to average market prices that were 74.7% higher in 2022 compared to 2021, as well as a $43.5 million increase in MISO market demand revenue driven by substantially higher prices in the annual MISO capacity auction.

Electric Revenue Billed



Other Operating Revenue

Other operating revenue decreased $3.6 million or 4.7% to $72.6 million in 2022 from $76.2 million in 2021. This decrease was driven by the loss of steam revenue from MAG's Blue Flint Ethanol plant and the loss of revenues from the sale of fly ash at Coal Creek Station as a result of the sale of the plant and the HVDC system during 2022. The decrease was offset partially by an increase in steam revenue from MAG's Dakota Spirit AgEnergy plant.

Operating Expenses

Total operating expenses for 2022 were $965.2 million, an increase of $71.1 million or 8.0% from $894.1 million in 2021.

Purchased power increased $253.1 million or 129.9% to $447.9 million in 2022 from $194.8 million in 2021. This was driven by MISO market purchases that were $265.8 million higher in 2022 compared to 2021. GRE purchased 5,073, or 200.6%, more GWh from the MISO market in 2022, those net purchases were made at average prices that were 7.5% higher than the same period in 2021. Additionally, purchased power from wind contracts increased $14.3 million due to 408 more GWh generated in 2022 compared to 2021. Purchased power under other contracts also increased $65.2 million in 2022 compared to 2021 driven by higher prices in the spot purchasing market and the addition of capacity purchases from the purchaser of Coal Creek Station subsequent to the sale of the plant. These increases were partially offset by $91.7 million of favorable financial settlements based on energy with the purchaser of Coal Creek Station. Also offsetting the overall increase was $4.4 million in revenue received from GRE's financial transmission rights (FTR). The FTR positions are accounted for as derivative instruments and are utilized by GRE as a hedge against transmission congestion between GRE's generation resources and load zones. The increased FTR revenue (which is recorded as an offset against purchased power) in 2022 is reflective of increased congestion experienced between GRE's generation resources and load zones compared to the same period in 2021.

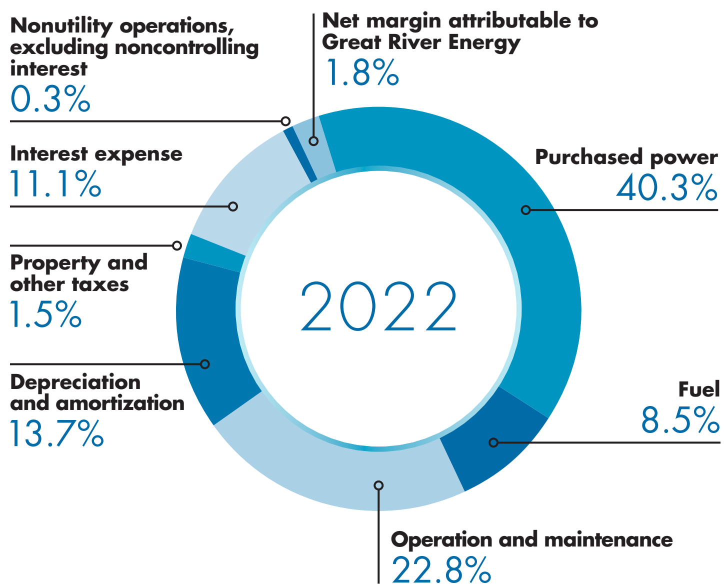
Fuel expense decreased $117.5 million or 55.5% to $94.2 million in 2022 from $211.7 million in 2021 driven primarily by a $118.4 million decrease in baseload plant production due to the sale of Coal Creek Station. Baseload output was 70.8% lower (2,669 GWh in 2022 compared to 9,152 GWh in 2021). This decrease was offset partially by a $0.9 million increase in peaking plant fuel expense driven by higher natural gas costs. While GRE's peaking plants were called upon by the market substantially less in 2022 compared to 2021 (peaking output was 261 GWh in 2022 compared to 423 GWh in 2021), the average natural gas price paid was 90.6% higher ($6.69 /MMBtu in 2022 compared to $3.51/MMBtu in 2021).

Operation and maintenance expense decreased $37.7 million or 12.9% to $253.5 million in 2022 from $291.2 million in 2021. This was primarily driven by the sale of Coal Creek Station in 2022 and GRE no longer operating and maintaining the plant subsequent to the sale. This decrease was offset partially by increased transmission operation and maintenance expenses due to higher costs to serve member load under inter-utility transmission agreements as well as a reduction in capitalized labor.

Property and other taxes decreased $8.0 million or 32.2% to $17.0 million in 2022 from $25.0 million in 2021. The decrease is due to a $3.3 million reduction in steam generation taxes in North Dakota that stemmed from a 2021 law change, a $3.4 million decrease in property taxes driven by favorable valuation resettlements in Minnesota and the impact of the sale of the HVDC system, and a $1.1 million decrease in Minnesota state income taxes.

Depreciation and amortization decreased $18.8 million or 11.0% to $152.6 million in 2022 from $171.4 million in 2021. The decrease is mainly due to no longer depreciating the Coal Creek Station and HVDC system assets due to the sale, offset partially by an increase in amortization of regulatory assets as a result of the impact of the plant sale.

Expenses and Margin



Other Income (Expense)

Other income—net decreased $0.4 million to $5.1 million in 2022 from $5.5 million in 2021. Interest income increased $4.6 million to $5.7 million in 2022 from $1.1 million in 2021, driven by higher interest rates as well as a higher average cash balance compared to 2021. Interest expense—net of amounts capitalized increased $4.2 million or 3.6% to $123.9 million in 2022 from $119.7 million in 2021 due to interest expense incurred on new debt issued by GRE in 2022.

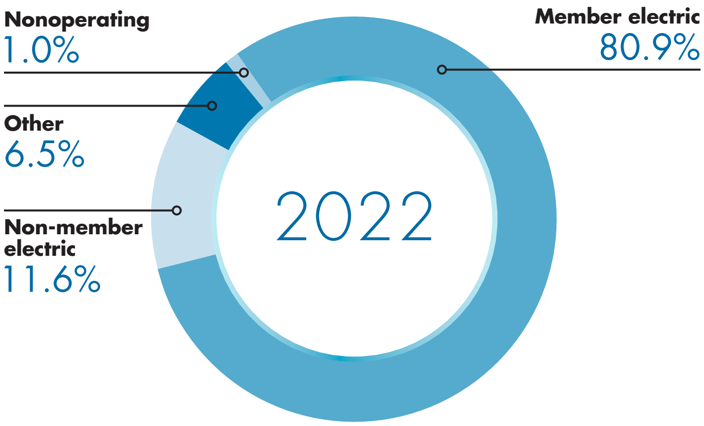
Nonutility Operations

Nonutility operating revenue and expense represent the operations of MAG, a subsidiary of GRE. MAG's operating income represents the operations of its two biorefinery plants, Blue Flint Ethanol and Dakota Spirit AgEnergy. In 2022, GRE and the noncontrolling interest owners of MAG closed on a transaction to sell their ownership interest in MAG to a third party. Prior to the transaction, MAG had operating income of $14.8 million in 2022. The transaction resulted in a $14.0 million loss to GRE and was recorded in (loss) income from equity method investments on the consolidated statements of operations and comprehensive income. Combined with GRE's other nonutility equity method investments, the overall impact of net nonutility operations was income of $1.0 million.

Noncontrolling Interest

Prior to closing the transaction for the sale of MAG, GRE was a 69.52% owner of MAG. The noncontrolling interest reflects the third-party investors' share of MAG's operating income as noncontrolling interest.

Revenues



Member Rate

GRE's 2022 member billed rate was 78.80 mills/kilowatt-hour (kWh) compared to 76.82 mills/kWh in 2021. The budgeted average member rates were 76.64 mills/kWh for 2022 and 75.90 mills/kWh for 2021. The 2.6% increase in the 2022 blended average rate was driven by higher net MISO costs and lower sales to members, partially offset by lower operating expenses, and a net PCA/bill credit. The 2022 and 2021 member billed rates reflect the refunds issued to members of $38.0 million and $57.1 million in 2022 and 2021, respectively. GRE deferred the recognition of $9.3 million of member electric revenue in 2022 compared to the recognition of deferred member electric revenues of $4.4 million in 2021.

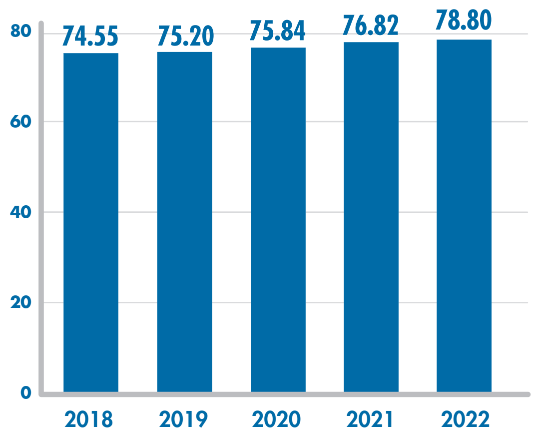
Balance Sheet Review

GRE's total consolidated assets were $3,817.0 million in 2022, an increase of $3.0 million year-over-year from 2021.

Utility plant—net decreased $113.5 million to $1,781.4 million in 2022 from $1,894.9 million in 2021. In 2022, GRE completed a transaction to sell Coal Creek Station and the HVDC system.

Member Average Rate Per kWh

EXCLUDING WAPA | MILLS PER KWH



As a result of the transaction, GRE ceased having a controlling financial interest in Falkirk Mine and deconsolidated their financial statements in 2022. The Falkirk deconsolidated assets accounted for a net decrease of $99.9 million. The remaining $13.6 million net decrease was driven by the depreciation and amortization of utility plant assets offset partially by utility plant additions.

Nonutility plant and equipment—net decreased $143.5 million to $0 in 2022 due to the deconsolidation of MAG's plant and equipment assets due to the sale discussed previously.

Other assets and investments increased $328.1 million to $1,352.8 million in 2022 from $1,024.7 million in 2021. Deferred charges—plant retirements increased $40.0 million, due to additional deferred retirement costs as part of the Coal Creek Station transaction, offset partially by amortization of all retired plant deferred charges. Deferred charges—other increased $6.5 million due to increases in deferred taxes which was driven by the impact of the Coal Creek Station and MAG transactions, offset partially by the decrease in the Coal Creek Station deferred outage regulatory asset. Derivative instruments—noncurrent increased $355.1 million as a result of the mark-to-market valuation of the noncurrent portion of a bilateral financial settlement contract. As part of the Coal Creek Station and HVDC system transaction, GRE entered into a bilateral financial settlement contract with the purchaser based on the energy output of the plant as a hedge to MISO load costs. GRE pays a fixed price for the energy output and the floating price is based on the MISO LMP. Deferred charges—financing related decreased $27.7 million due to the amortization of the settled interest rate swaps and the impact of open interest rate swaps moving from a liability position to an asset position in 2022 compared to 2021.

Current assets decreased $68.1 million to $682.8 million in 2022 from $750.9 million in 2021. Assets held for sale decreased $214.5 million due to the completion of the Coal Creek Station and HVDC system transaction. Accounts receivable – members decreased $13.6 million primarily as a result of a lower PCA charge in 2022 compared to the same period in 2021. Accounts receivable – others decreased $15.9 million as a result of the deconsolidation of MAG. Inventories decreased $15.6 million primarily due to the deconsolidation of MAG and Falkirk Mine. These decreases were offset partially by an increase in cash and cash equivalents of $113.6 million due to the issuance of new debt in 2022 and the receipt of proceeds from the completion of the sale of MAG, offset partially by repayment of long-term obligations and the retirement of patronage capital. Additionally, derivative instruments – current increased $85.8 million as a result of an increase in the fair value of GRE's interest rate swaps and the mark-to-market valuation of the current portion of the financial settlement contract (discussed previously) offset by the decrease in the fair value of GRE's financial transmission rights and the deconsolidation of MAG.

Members' capital decreased $6.3 million to $690.7 million as a result of $19.8 million of net margin attributable to GRE added in 2022, more than offset by the retirement of $25.0 million of patronage capital returned to members. GRE's equity to capitalization ratio was 23.1% at the end of 2022.

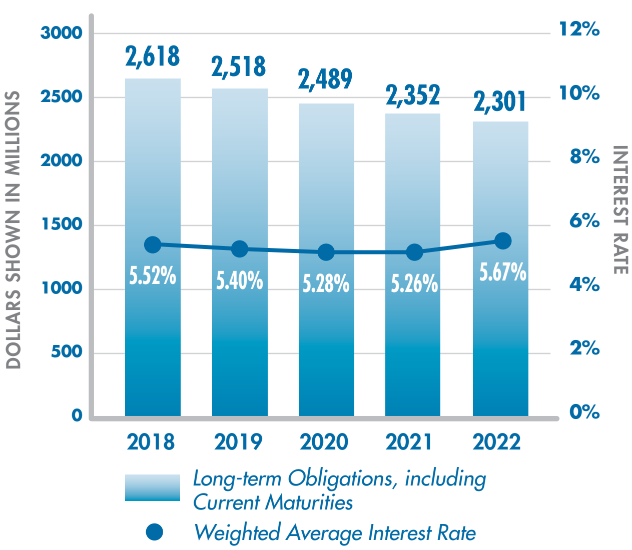
Noncontrolling interest—subsidiary represents the capital attributable to MAG's third-party investors and is $0 as a result of the sale of MAG.

Other noncurrent liabilities decreased $269.8 million to $46.0 million in 2022 from $315.8 million in 2021, driven primarily by the deconsolidation of Falkirk Mine's reclamation asset retirement obligation and a reduction in GRE's Coal Creek Station asset retirement obligations as a result of the plant sale.

Regulatory liabilities increased $347.8 million to $398.7 million in 2022 from $50.9 million in 2021. This is primarily driven by a $355.1 million increase in the noncurrent portion of the financial settlement contract (discussed earlier) and the deferral of $9.3 million in member electric revenue in 2022.

Long-term obligations decreased $47.1 million to $2,134.2 million in 2022 from $2,181.3 million in 2021. The decrease was driven by principal payments made during the year and the deconsolidation of MAG and Falkirk Mine, offset partially by the issuance of new debt in 2022.

Long-Term Debt



Deferred income taxes increased $21.7 million to $36.0 million in 2022 from $14.2 million in 2021. The sale of Coal Creek Station and the HVDC system resulted in a significant taxable loss in 2022 with the expectation that GRE will not be able to fully utilize the corresponding state NOLs in MN & ND, therefore GRE recorded a $19.4M valuation allowance in 2022 to reflect the NOL carryforward anticipated to be lost.

Current liabilities decreased $13.6 million to $493.0 million in 2022 from $506.6 million in 2021. Other accrued liabilities and notes payable decreased $77.3 million mainly due to the settlement of several accruals related to the sale of Coal Creek Station and the HVDC system, as well as the deconsolidation of Falkirk Mine and MAG. Derivative instruments decreased $34.1 million due to the deconsolidation of MAG and the movement of the interest rate swaps from a liability position to an asset position in 2022 compared to 2021. These decreases were offset partially by an increase in regulatory liabilities – current of $105.3 million due to the current portion of the mark-to-market valuation of the financial settlement contract (discussed earlier) and fair value of GRE's financial transmission rights.

Liquidity Position and Financing

GRE's year end 2022 unrestricted available liquidity of $685.4 million was comprised of cash and cash equivalents of $352.4 million and unused capacity on its existing unsecured credit facilities of $333.0 million. GRE's unsecured credit facilities include a $300.0 million revolving credit agreement that expires in May 2026. GRE also has a $60.0 million line of credit that expires in October 2025. GRE uses its unsecured credit facilities for funding general working capital needs, financing its construction program, and providing a source of financial assurance in the form of letters of credit primarily related to market participant obligations under the MISO tariff. GRE has the option to increase the aggregate amount of credit extended to $400.0 million under the revolving credit agreement and $100.0 million under the line of credit, subject to certain terms and conditions.

Construction borrowings on the unsecured credit facilities are repaid periodically with issuances of long-term secured debt under GRE's Indenture of Mortgage, Security Agreement, and Financing Statement. Since GRE's 2007 prepayment of its debt under the RUS Mortgage with the issuance of the $1.3 billion Series 2007A bonds, GRE has issued an additional $2.8 billion of secured debt.

Utilizing existing available cash and cash equivalents, budgeted internally generated funds, and planned short-term borrowings under credit facilities, GRE anticipates being able to fund planned additions and upgrades to existing generation, transmission, and other general plant facilities until the next forecasted debt issuance.

GRE's financial position continues to strengthen. GRE returned $25.0 million of patronage capital to its members in both 2022 and 2021, and based on the financial position as of December 31, 2022, has plans to return an additional $25.0 million in March 2023. In addition to this, GRE has maintained its competitive member rates position compared to others within the region, investment grade credit ratings, and strong liquidity position. GRE is proud of its strong 2022 financial results given the challenging market conditions and believes it is well positioned to continue the evolution of its power supply and transmission portfolios while also achieving its future financial and operational goals.

To the Board of Directors and Members of Great River Energy:

Management is responsible for the fairness and accuracy of the financial information presented in this annual report. The accompanying financial statements have been prepared in accordance with generally accepted accounting principles, using management's best estimates and judgments where appropriate. Great River Energy maintains an internal accounting control system that provides reasonable assurance of the integrity and reliability of the financial statements and the protection of assets from loss or unauthorized use or disposition. Directors, who are not employees, make up the Finance and Audit Committee of the Board of Directors. The committee meets regularly with management and its independent public accountants to review and discuss Great River Energy's internal accounting controls and financial reports. The independent public accountants have free access to the committee and the board of directors, without management present, to discuss the findings of their audits.

David Saggau
President and CEO
Great River Energy
Maple Grove, Minnesota
March 3, 2022

To the Board of Directors of Great River Energy

MAPLE GROVE, MINNESOTA

Opinion

We have audited the consolidated financial statements of Great River Energy and subsidiaries (the "Company"), which comprise the consolidated balance sheets as of December 31, 2022 and 2021, and the related consolidated statements of operations and comprehensive income, changes in capital, and cash flows for the three years in the period ended December 31, 2022, and the related notes to the consolidated financial statements (collectively referred to as the "financial statements").

In our opinion, based on our audits and the reports of the other auditors, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for the three years in the period ended December 31, 2022, in accordance with accounting principles generally accepted in the United States of America.

We did not audit the financial statements of Midwest AgEnergy ("MAG"), a consolidated subsidiary through November 30, 2022, or The Falkirk Mining Company ("Falkirk"), a variable interest entity through May 1, 2022, which statements reflect total assets constituting 0% and 4%, respectively, of consolidated total assets as of December 31, 2022 and 2021, and total revenues constituting 30%, 31% and 19%, respectively, of consolidated total revenues for the three years in the period ended December 31, 2022. Those statements were audited by other auditors, whose reports have been furnished to us, and our opinion, insofar as it relates to the amounts included for Falkirk and MAG, is based solely on the reports of the other auditors.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Company 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 Financial Statements

Management is responsible for the preparation and fair presentation of the 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 financial statements that are free from material misstatement, whether due to fraud or error.

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

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the 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 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 financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the 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 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 the Company'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 financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company'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 Information Included in the Annual Report

Management is responsible for the other information included in the management report and letter to stakeholders. The other information comprises the information included in the management report and letter to stakeholders but does not include the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audits of the financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Deloitte & Touche LLP

March 6, 2023

Consolidated Balance Sheets

AS OF DECEMBER 31, 2022 AND 2021 (IN THOUSANDS)

ASSETS	2022	2021
UTILITY PLANT:		
Electric plant	$ 2,838,420	$ 2,721,646
Coal mine plant	-	413,792
Construction work in progress	52,440	29,532
Less accumulated depreciation and amortization	(1,109,431)	(1,270,033)
Utility plant—net	1,781,429	1,894,937
NONUTILITY PLANT AND EQUIPMENT—Net	-	143,542
OTHER ASSETS AND INVESTMENTS:		
Restricted investments—deferred compensation	18,532	18,851
Other investments	34,361	33,789
Deferred charges:		
Financing related	95,219	122,880
Contract settlement	4,310	5,900
Plant retirements	775,888	735,862
Other	48,008	41,511
Other long-term assets	21,418	65,887
Derivative instruments—noncurrent	355,076	-
Total other assets and investments	1,352,812	1,024,680
CURRENT ASSETS:		
Cash and cash equivalents	352,556	238,945
Restricted cash	-	12,011
Assets held for sale	-	214,455
Accounts receivable:		
Members	140,580	154,162
Others	21,418	37,291
Inventories:		
Materials and supplies	44,343	47,377
Fuel	7,135	12,750
Other	-	6,934
Prepaids and other current assets	11,505	7,450
Derivative instruments—current	105,264	19,512
Total current assets	682,801	750,887
TOTAL	$ 3,817,042	$ 3,814,046

CONTINUED

Consolidated Balance Sheets

AS OF DECEMBER 31, 2022 AND 2021 (IN THOUSANDS)

CAPITAL AND LIABILITIES	2022	2021
CAPITAL:		
Members:		
Patronage capital	$ 690,658	$ 695,844
Memberships	3	3
Additional paid-in capital—subsidiary—MAG	-	1,195
Total members' capital	690,661	697,042
Noncontrolling interest—subsidiary—MAG	-	29,312
Total capital	690,661	726,354
OTHER NONCURRENT LIABILITIES	46,046	315,818
REGULATORY LIABILITIES	398,706	50,921
LONG-TERM OBLIGATIONS—Less current portion	2,134,178	2,181,298
DEFERRED COMPENSATION	18,532	18,851
DEFERRED INCOME TAXES	35,955	14,224
COMMITMENTS AND CONTINGENCIES		
CURRENT LIABILITIES:		
Long-term obligations—current	166,506	171,089
Regulatory liabilities—current	105,264	-
Notes payable to members	55,430	51,237
Accounts payable	93,079	95,955
Property and other taxes	19,584	24,998
Other accrued liabilities and notes payable	38,862	116,130
Accrued interest payable	13,983	12,783
Derivative instruments	256	34,388
Total current liabilities	492,964	506,580
TOTAL	$ 3,817,042	$ 3,814,046

SEE NOTES TO CONSOLIDATED FINANCIAL STATEMENTS. *CONCLUDED*

Consolidated Statements of Operations and Comprehensive Income

FOR THE YEARS ENDED DECEMBER 31, 2022, 2021, AND 2020 (IN THOUSANDS)

UTILITY OPERATIONS	**2022**	**2021**	**2020**
UTILITY OPERATING REVENUE:			
Electric revenue	$1,028,754	$ 954,021	$ 904,608
Other operating revenue	72,597	76,222	76,311
Total utility operating revenue	1,101,351	1,030,243	980,919
UTILITY OPERATING EXPENSES:			
Purchased power	447,914	194,797	155,078
Purchased power—deferred charge write-off	-	-	56,092
Fuel	94,234	211,744	192,212
Fuel—Section 45 lease revenue	-	-	(149,957)
Fuel—deferred charge write-off	-	-	71,055
Operation and maintenance	253,536	291,209	296,761
Operation and maintenance—deferred charge write-off	-	-	11,983
Depreciation and amortization	152,587	171,382	166,569
Property and other taxes	16,948	25,005	30,987
Total utility operating expenses	965,219	894,137	830,780
UTILITY OPERATING MARGIN	136,132	136,106	150,139
OTHER INCOME (EXPENSE):			
Other income—net	5,095	5,459	6,004
Interest income	5,701	1,103	1,744
Interest expense—net of amounts capitalized	(123,928)	(119,668)	(127,244)
Other expense—net	(113,132)	(113,106)	(119,496)
NET UTILITY MARGIN	23,000	23,000	30,643
NONUTILITY OPERATIONS:			
Operating revenue	439,394	457,976	234,234
Operating expense	424,575	427,397	243,969
Operating income (loss)	14,819	30,579	(9,735)
(Loss) income from equity method investments	(13,822)	(89)	1
Loss from variable interest entity—NDRC	-	-	(149,991)
Total nonutility operations	997	30,490	(159,725)
NET MARGIN (LOSS) AND COMPREHENSIVE INCOME (LOSS), INCLUDING NONCONTROLLING INTEREST	23,997	53,490	(129,082)
NONCONTROLLING INTEREST:			
Subsidiary—MAG	(4,183)	(6,604)	2,091
Variable interest entity—NDRC	-	-	149,991
Total noncontrolling interest	(4,183)	(6,604)	152,082
NET MARGIN AND COMPREHENSIVE INCOME ATTRIBUTABLE TO GREAT RIVER ENERGY	$ 19,814	$ 46,886	$ 23,000

SEE NOTES TO CONSOLIDATED FINANCIAL STATEMENTS.

Consolidated Statements of Changes in Capital

FOR THE YEARS ENDED DECEMBER 31, 2022, 2021, AND 2020 (IN THOUSANDS)

	Patronage Capital	Memberships	Additional Paid-in Capital	Noncontrolling Interest Subsidiary—MAG	Noncontrolling Interest Variable Interest Entity—NDRC	Total Capital
BALANCE—January 1, 2020	$ 661,158	$ 3	$ 1,195	$ 24,951	$ 166,841	$ 854,148
Net margin (loss) and comprehensive income (loss)	23,000	-	-	(2,091)	(149,991)	(129,082)
Return of members' patronage capital	(10,200)	-	-	-	-	(10,200)
Capital contributed by noncontrolling interest	-	-	-	-	13,614	13,614
Capital distributed to noncontrolling interest	-	-	-	(152)	(30,378)	(30,530)
Dividends paid by noncontrolling interest	-	-	-	-	(86)	(86)
BALANCE—December 31, 2020	$ 673,958	$ 3	$ 1,195	$ 22,708	$ -	$ 697,864
Net margin and comprehensive income	46,886	-	-	6,604	-	53,490
Return of members' patronage capital	(25,000)	-	-	-	-	(25,000)
BALANCE—December 31, 2021	$ 695,844	$ 3	$ 1,195	$ 29,312	$ -	$ 726,354
Net margin (loss) and comprehensive income (loss)	19,814	-	(1,195)	4,183	-	22,802
Return of members' patronage capital	(25,000)	-	-	-	-	(25,000)
Capital transferred to noncontrolling interest	-	-	-	11,087	-	11,087
Capital distributed to noncontrolling interest	-	-	-	(44,582)	-	(44,582)
BALANCE—December 31, 2022	$ 690,658	$ 3	$ -	$ -	$ -	$ 690,661

SEE NOTES TO CONSOLIDATED FINANCIAL STATEMENTS.

Consolidated Statements of Cash Flows

FOR THE YEARS ENDED DECEMBER 31, 2022, 2021, AND 2020 (IN THOUSANDS)

	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net margin (loss), including noncontrolling interest	$ 23,997	$ 53,490	$ (129,082)
Adjustments to reconcile net margin (loss) to net cash (used in) provided by operating activities:			
Depreciation and amortization:			
Included in depreciation and amortization	152,587	171,382	166,569
Included in fuel and interest	14,155	23,001	24,018
Included in operation and maintenance	8,528	18,866	18,896
Included in purchased power	488	-	-
Included in nonutility operating expense	8,919	10,134	10,199
Gain on loan forgiveness	-	(6,794)	-
Unrealized (gains) losses on commodity derivatives	(10,233)	4,156	7,918
Loss on disposal of nonutility plant and equipment	298	148	1,357
Loss (income) from equity method investments	13,822	89	(1)
Patronage credits earned from investments	(1,501)	(1,467)	(1,586)
Deferred charges	(26,217)	(18,068)	91,870
Regulatory liabilities	12,934	(4,400)	(12,074)
Changes in working capital (excluding cash, investments, and borrowings):			
Accounts and long-term receivables	9,276	(18,173)	(6,305)
Inventory and other assets	(18,500)	17,437	(8,224)
Accounts payable, taxes, and other accrued expenses	(233,782)	14,248	(18,677)
Accrued interest	1,200	(1,194)	360
Noncurrent liabilities	(6,536)	(6,773)	(5,507)
Net cash (used in) provided by operating activities	(50,565)	256,082	139,731
CASH FLOWS FROM INVESTING ACTIVITIES:			
Utility plant additions	(77,022)	(71,968)	(91,275)
Nonutility plant and equipment additions	(41,670)	(8,294)	(953)
Proceeds from sale of property	207,759	736	9,778
Equity method investments	83,890	-	-
Redemption of patronage capital from investments	929	946	923
Purchases of investments	(99)	-	-
Net cash provided by (used in) investing activities	173,787	(78,580)	(81,527)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from issuance of long-term obligations	388,000	295,396	484,485
Repayments of long-term obligations	(383,594)	(427,628)	(527,359)
Return of members' patronage capital	(25,000)	(25,000)	(10,200)
Cost of new debt issuances	(2,828)	(1,265)	(3,731)
Notes received from members—net	4,193	426	6,391
Subsidiary—MAG:			
Capital distributed to noncontrolling interest	(2,393)	-	(152)
Variable interest entity—NDRC:			
Capital contributed by noncontrolling interest	-	-	13,614
Capital distributed to noncontrolling interest	-	-	(30,378)
Dividends paid by noncontrolling interest	-	-	(86)
Net cash used in financing activities	(21,622)	(158,071)	(67,416)
NET INCREASE (DECREASE) IN CASH, CASH EQUIVALENTS, AND RESTRICTED CASH	101,600	19,431	(9,212)
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH—Beginning of year	250,956	231,525	240,737
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH—End of year	$ 352,556	$ 250,956	$ 231,525

SEE NOTES TO CONSOLIDATED FINANCIAL STATEMENTS.

1. Organization

Organization—Great River Energy (GRE) is a Minnesota electric generation and transmission cooperative corporation providing wholesale electric service to member distribution cooperatives engaged in the retail sale of electricity to member consumers in Minnesota and a small section of Wisconsin. This service is provided in accordance with the terms of the power purchase and transmission service contracts between GRE and the members. These contracts have expiration dates of December 31, 2045, and December 31, 2050, respectively.

Basis of Accounting—The consolidated financial statements are prepared on the accrual basis of accounting and include the accounts of GRE as well as the following entities:

ENTITY	RELATIONSHIP	DATE NO LONGER CONSOLIDATED
The Falkirk Mining Company (Falkirk)	Variable interest entity	May 1, 2022
North Dakota Refined Coal LLC (NDRC)	Variable interest entity	January 31, 2020
Midwest AgEnergy Group, LLC (MAG)	Subsidiary of GRE	December 1, 2022
Blue Flint Ethanol LLC (Blue Flint)	Subsidiary of MAG	December 1, 2022
Dakota Spirit AgEnergy, LLC (DSA)	Subsidiary of MAG	December 1, 2022

All intercompany balances and transactions have been eliminated in consolidation, except for steam and electricity sales between GRE and MAG discussed within Note 1.

Falkirk—As part of the transaction to sell Coal Creek Station, GRE's facility located near Underwood, North Dakota, and the HVDC system (see Note 15), GRE and Falkirk terminated their coal supply agreement on May 1, 2022, which had been in place for the development and operation of a lignite coal mine to supply coal for Coal Creek Station and Spiritwood Station, GRE's facility located near Jamestown, North Dakota. Falkirk is a wholly owned subsidiary of the North American Coal Corporation (NACC), which is a wholly owned subsidiary of NACCO Industries, Inc. Falkirk is principally engaged in lignite mining through the operation of a surface mine in North Dakota.

Prior to the termination of the coal supply agreement, GRE financed all the costs associated with the mine development and operation. Accounting principles generally accepted in the United States of America (GAAP) required GRE to consolidate Falkirk in its financial statements since Falkirk qualified as a variable interest entity for which GRE was the primary beneficiary.

The coal purchase price includes all costs incurred by Falkirk for development and operation of the mine these costs are part of the contract cost of coal purchased under the coal supply agreement and is included in fuel expense on the consolidated statements of operations and comprehensive income. Accordingly, the net effect of consolidating the income statement of Falkirk had no impact on GRE's margin for the years ended December 31, 2022, 2021, and 2020.

Upon termination of the coal supply agreement on May 1, 2022, GRE ceased having a variable interest in Falkirk as the primary beneficiary. As such, and per the guidance set forth in Accounting Standards Codification (ASC) 810 *Consolidation*, GRE deconsolidated the financial statements of Falkirk. The coal purchased by GRE under the coal supply agreement for the period ended April 30, 2022, is included in fuel expense on the consolidated statements of operations and comprehensive income for the year ended December 31, 2022. The related cash flows for Falkirk for the four-month period ended April 30, 2022, have been included in the consolidated statements of cash flows for the year ended December 31, 2022.

Assets and liabilities of Falkirk included in the consolidated balance sheets as of December 31, 2021, after intercompany eliminations, are as follows (in thousands):

	2021
Coal mine plant	$ 365,487
Accumulated depreciation and amortization	(243,556)
Deferred charges	6,943
Other long-term assets	22,827
Materials and supplies inventory	22,553
Fuel inventory	6,335
Other current assets	1,804
Other noncurrent liabilities	186,715
Long-term obligations	10,146
Current liabilities	16,761

NDRC—In 2011, GRE entered into an agreement with NDRC, or its wholly owned subsidiaries, for the lease and operation of the DryFining facility at Coal Creek Station. GRE closed a transaction on January 31, 2020, by exercising a purchase option to buy out of the remaining term of the original 16-year lease term for $17.0 million.

The result of the transaction, is summarized below (in thousands):

(Revenue) Expense	2020
Deferred lease revenue recognized	$ (166,957)
Purchase option price	17,000
Refined coal purchase costs regulatory asset	66,000
Transaction costs related to NDRC regulatory asset	5,055
Net gain recognized on transaction	$ (78,902)

In accordance with regulatory accounting, GRE utilized the net gain on transaction to write off $56.1 million of the purchase power contract settlement regulatory asset as a charge to purchased power expense and to write off $9.0 million of the settled postretirement benefit plans regulatory asset as a charge to operation and maintenance expense. The remaining net gain of $13.8 million was recognized in net margin in 2020.

For NDRC, the transaction resulted in the recognition of a net loss of $150.0 million, which represents the expensing of net prepaid lease payments, reducing its equity to $0. All operational metrics included in the lease and related agreements were met over the life of the transaction. As a result, no amounts related to these metrics were paid to NDRC at transaction closing.

Additionally, upon the closing and settlement of the transaction, GRE ceased having a controlling financial interest in NDRC. As such, and per the guidance set forth in ASC 810 *Consolidation*, GRE deconsolidated the financial statements of NDRC subsequent to January 31, 2020. The result of operations and related cash flows for NDRC for the month ended January 31, 2020, have been included in the consolidated statements of operations and comprehensive income, changes in capital, and cash flows, respectively, for the year ended December 31, 2020.

Prior to the closing and settlement of the transaction, GRE was required per ASC 810 *Consolidation* to consolidate NDRC in its financial statements since NDRC qualified as a variable interest entity for which GRE is the primary beneficiary. The net loss incurred by NDRC of $150.0 million for the year ended December 31, 2020, is reported as nonutility operations in the consolidated statements of operations and comprehensive income and is all attributed to the noncontrolling interest owners.

MAG— MAG has two wholly owned subsidiaries, Blue Flint and DSA. Blue Flint operates an ethanol biorefinery facility located in Underwood, North Dakota. DSA operates a biorefinery located near Jamestown, North Dakota. Blue Flint and DSA each have a production capacity of approximately 75-80 million gallons of undenatured ethanol per year. Both facilities are dry-mill production facilities that produce and sell ethanol, dry and modified distillers grain, and distillers oil.

As part of the transaction to sell Coal Creek Station and the HVDC system (see Note 15), GRE transferred 8.91% of its ownership interest in MAG to the noncontrolling interest. This reduced GRE's ownership interest in MAG from 78.43% to 69.52% but did not have an impact on GRE's consolidation conclusions reached under ASC 810 *Consolidation* to consolidate MAG in its financial statements.

On December 1, 2022, GRE and the noncontrolling interest owners of MAG closed on a transaction to sell their ownership interest in MAG to a third party. Upon closing the transaction, per the guidance set forth in ASC 810 *Consolidation*, GRE deconsolidated the financial statements of MAG subsequent to November 30, 2022. The result of operations and related cash flows for MAG for the period ended November 30, 2022, have been included in the consolidated statements of operations and comprehensive income, changes in capital, and cash flows, respectively, for the year ended December 31, 2022. The transaction resulted in a $14.0 million loss to GRE and is recorded in (loss) income from equity method investments on the consolidated statements of operations and comprehensive income. The transaction contains elements of contingent consideration tied to operations and capital expenditures over a two- to four-year period. GRE will recognize this contingent consideration (if any) in accordance with ASC 450-30 *Gain Contingencies*.

Prior to the closing of the transaction to sell Coal Creek Station and the HVDC system (see Note 15), Blue Flint purchased steam and water from Coal Creek Station under a long-term contract with GRE. DSA purchases steam and water under a long-term contract from Spiritwood Station for use in the production of ethanol and related products. Steam and water purchases were $12.3 million, $14.2 million, and $12.4 million for the years ended December 31, 2022 (prior to deconsolidation), 2021, and 2020, respectively. The sale of steam and water by GRE is recorded as utility other operating revenue, and the purchase by Blue Flint and DSA is recorded as nonutility operating expense. DSA also purchases electricity from GRE for powering the production of ethanol and related products. Electricity sales were $2.8 million $3.0 million, and $2.8 million for the years ended December 31, 2022 (prior to deconsolidation), 2021, and 2020, respectively. The sale of electricity by GRE is recorded as electric revenues, and the purchase by DSA is recorded as nonutility operating expense. These transactions were not eliminated in consolidation for 2022, 2021, and 2020.

Utility net margin and nonutility operating income as of December 31, 2022, 2021, and 2020, would be as follows had these transactions been eliminated (in thousands):

	2022		2021		2020	
	As Presented	With Elimination	As Presented	With Elimination	As Presented	With Elimination
Net utility margin	$ 23,000	$ 7,918	$ 23,000	$ 5,846	$ 30,643	$ 18,262
Nonutility operating (loss) income	(3,186)	11,896	23,886	41,040	(7,643)	4,738
Total	$ 19,814	$ 19,814	$ 46,886	$ 46,886	$ 23,000	$ 23,000

In 2021, GRE entered into an amended agreement with MAG for the early termination of the Blue Flint site lease and the steam and water supply agreement. The amended agreement calls for GRE to pay MAG an agreed upon termination payment. GRE's board of directors authorized regulatory accounting for the termination payment and GRE has deferred the amount as part of the plant retirements regulatory asset (see Note 11).

2. Summary of Significant Accounting Policies

Regulatory Accounting—As the board of directors sets rates on a cost-of-service basis, GRE follows GAAP related to the effects of certain types of regulation, which provide for the reporting of assets and liabilities consistent with the economic effect of the rate structure. As such, regulatory assets are recorded to reflect probable future revenues associated with certain costs that are expected to be recovered from customers through the ratemaking process. Regulatory liabilities are recorded to reflect probable future reductions in revenues associated with amounts that are expected to be credited to customers through the ratemaking process. For further information, see Note 11.

Public Business Entity—GRE believes it meets the definition of a public business entity due to the issuance of debt securities that are traded on an over-the-counter market.

Cash, Cash Equivalents, and Restricted Cash—Cash equivalents include all highly liquid investments with original maturities of three months or less (e.g., money market funds). Certain cash and cash equivalents are classified as investments when they relate to trust funds held for long-term purposes.

Restricted cash represents GRE cash deposits held in trust which are restricted for allowable purposes under GRE's Indenture of Mortgage, Security Agreement, and Financing Statement. Restricted cash also includes MAG cash deposits with commodity investment brokers held as collateral to cover settlements of futures and options contracts.

Supplemental Cash Flow Information—Supplemental cash flow information for the years ended December 31, 2022, 2021, and 2020, is as follows (in thousands):

	2022	2021	2020
Supplemental disclosure of cash flow information:			
Cash paid for interest—net of amounts capitalized	$ 124,038	$ 121,567	$ 127,578
Cash paid for taxes—Falkirk	$ 530	$ 4,280	$ 118
Noncash investing and financing activities:			
Utility and nonutility plant acquisitions included in accounts payable	$ 12,769	$ 6,968	$ 5,435

Interest on borrowed funds in the amount of $1.6 million, $1.8 million, and $1.7 million was capitalized in 2022, 2021, and 2020, respectively, and these amounts are excluded from the cash payments for interest noted above.

Inventories—Materials and supplies inventories are stated at lower of average cost or net realizable value. Fuel inventories are carried at average cost and include coal, lime, oil, and gas used for electric generation. Other inventories represent corn, work in process, chemicals, ethanol, distillers grains, and corn oil inventories held at MAG (prior to deconsolidation). Corn, work in process, and chemical inventories are stated at the lower of cost (first-in, first-out method) or net realizable value. Ethanol, distillers grains, and corn oil inventories are stated at the lower of cost (average monthly cost) or net realizable value.

Emission allowances are also accounted for as fuel inventory and recorded at the lower of cost or net realizable value. Renewable energy credits (RECs) are either purchased or acquired in the course of generation, or purchased as a result of meeting load obligations, and are recorded as fuel inventory at cost. GRE's allowances and RECs in inventory have a recorded cost of $0.7 million and $0.7 million as of December 31, 2022 and 2021, respectively.

Utility Plant—Utility plant is stated at original cost, which includes materials, contract and direct labor, overhead, and interest during construction. Interest charged to construction on borrowed funds are included as a component of utility plant cost and credited to interest expense. The rates applied reflect the actual rates for borrowed funds. Repairs and maintenance are charged to operations as incurred. When generation and transmission assets are retired, sold, or otherwise disposed of, the original cost, plus the cost of removal, less salvage, is charged to accumulated depreciation and the corresponding gain or loss is amortized over the remaining life of the plant. Included in accumulated depreciation are retired assets totaling $17.8 million and $35.3 million as of December 31, 2022 and 2021, respectively, that will continue to be amortized. Also included in accumulated depreciation are nonlegal or noncontractual costs of removal components in the amount of $8.0 million and $6.9 million for 2022 and 2021, respectively. When other property assets are retired or sold, the cost and related accumulated depreciation are eliminated and any gain or loss is reflected in depreciation expense.

Assets Held for Sale—As of December 31, 2021, GRE determined it had met the criteria set forth in ASC 360 *Property, Plant and Equipment* for the assets included in the transaction to sell Coal Creek Station and the HVDC system (see Note 15). As such, GRE wrote down the carrying value of the disposal group to its fair value and classified the disposal group within assets held for sale in the consolidated balance sheet. The loss on disposal was as follows (in thousands):

	2021
Coal Creek Station—carrying value	$ 491,056
HVDC system—carrying value	218,638
Total disposal group—carrying value	709,694
Total disposal group—fair value	214,455
Loss on disposal	$ 495,239

In accordance with regulatory accounting approved by the board of directors, GRE deferred the $495.2 million loss on disposal (see Note 11).

Depreciation and Amortization—Depreciation for financial reporting purposes is provided based upon the straight-line method at rates designed to amortize the original cost of properties over their estimated service lives. The effective depreciation rate was 2.6%, 3.4%, and 3.3% for 2022, 2021, and 2020, respectively. The range of useful lives for utility plant is three to 50 years. Coal mine plant and equipment is depreciated or amortized over the estimated useful lives using either the straight-line method or the units-of-production method based on estimated recoverable tonnage and is included in utility fuel expense in the consolidated statements of operations and comprehensive income. Amortization of coal lands and leaseholds is calculated on the units-of-production method based upon estimated recoverable tonnage and is included in utility fuel expense in the consolidated statements of operations and comprehensive income. In 2020, coal mine plant useful lives were revised by Falkirk to coincide with the announced plans to sell Coal Creek Station or retire it in 2022. The additional depreciation and amortization expense that resulted from the revision was deferred by GRE in 2022, 2021, and 2020 in accordance with regulatory accounting (see Note 11). Amortization expense also includes the accretion expense related to asset retirement obligations and the amortization of deferred charges, except as described in Note 11.

Nonutility Plant and Equipment—Net—Nonutility plant and equipment represents the plant and equipment assets of MAG. GRE deconsolidated MAG upon closing the transaction to sell its ownership interest to a third party on December 1, 2022, as described in Note 1. Depreciation for financial reporting purposes is provided based upon the straight-line method. The range of useful lives for nonutility plant and equipment is three to 40 years.

A summary of nonutility plant and equipment—net as of December 31, 2021, is as follows (in thousands):

	2021
Land improvements	$ 16,166
Buildings and improvements	37,039
Plant equipment and other	160,601
Construction work in progress	7,452
Less accumulated depreciation	(77,716)
	$ 143,542

Recoverability of Long-Lived Assets—GRE reviews its long-lived assets whenever events or changes in circumstances indicate the carrying value of the assets may not be recoverable. GRE determines potential impairment by comparing the carrying value of the asset with the net cash flows expected to be provided by the operating activities of the business or related products. Should the sum of the expected cash flows be less than the carrying values, GRE would determine whether an impairment loss should be recognized. Other than the loss on disposal of assets held for sale recorded as of December 31, 2021, no impairment losses have been identified in the consolidated financial statements.

Income Taxes—GRE accounts for income taxes using the asset/liability method prescribed under ASC 740, *Income Taxes*. Under this method, deferred income taxes are recognized for temporary differences between the tax and financial reporting bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. GRE establishes a regulatory asset or liability to account for the difference between GRE's deferred tax assets or liabilities. A regulatory asset or liability associated with deferred income taxes generally represents the future increase or decrease in income taxes payable that will be received or settled through future rate increases.

Members' Patronage Capital—Revenues in excess of current-period costs (net margin and comprehensive income attributable to GRE in the consolidated statements of operations and comprehensive income) in any year are designated as assignable margins. These assignable margins are considered capital furnished by the members and are credited to the members' individual accounts. Assignable margins are held by GRE until they are retired and returned, without interest, at the discretion of the board of directors and subject to long-term obligation agreement restrictions (see Note 5). The board of directors has adopted a policy of retiring and returning assignable margins (patronage capital) on a first-in, first-out basis. Upon approval by the board of directors, GRE retired and returned patronage capital of $25.0 million, $25.0 million, and $10.2 million in 2022, 2021, and 2020, respectively. Retained assignable margins are designated as patronage capital in the consolidated balance sheets.

Use of 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. The significant estimates in the consolidated financial statements relate to key inputs to actuarial calculations of defined benefit obligations (related to Falkirk prior to deconsolidation), compensation and benefit accruals, asset retirement obligation liabilities, accrued property and other taxes, useful lives of utility and nonutility plant, recoverability of deferred tax assets, and contingencies and other reserves. Actual results could differ from those estimates.

Revenue Recognition—GRE recognizes revenue to depict the transfer of goods and services to customers in an amount that reflects the consideration to which GRE expects to be entitled in exchange for those goods or services. The related disclosures below provide further information about the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

Revenues from Contracts with Customers

The revenues of GRE are primarily derived from providing wholesale electric service to members. Revenues from contracts with customers represent over 99% of all GRE revenues. Below is a disaggregated view of GRE's revenues from contracts with customers as well as other revenues, including their location on the statement of operations and comprehensive income (in thousands):

Year Ended December 31, 2022

Revenue streams	Electric Revenue	Other Operating Revenue	Other Income-Net	Nonutility Operating Revenue
Member revenue	$ 899,299	$ -	$ -	$ -
Non-member revenue – MISO	70,681	-	-	-
Non-member revenue	58,774	-	-	-
Transmission revenue – related to others	-	57,468	-	-
Utility plant byproduct revenue	-	13,882	-	-
Other income – net	-	-	5,095	-
Ethanol sales	-	-	-	315,440
Ethanol byproduct revenue	-	-	-	112,449
Other revenue	-	-	-	2,602
Total revenue from contracts with customers	1,028,754	71,350	5,095	430,491
Interest income	-	-	5,701	-
Lease income	-	1,247	-	-
Other income	-	-	-	8,739
Realized and unrealized losses on commodity contracts	-	-	-	164
Total revenue	$ 1,028,754	$ 72,597	$ 10,796	$ 439,394
Timing of revenue recognition				
Services transferred over time	$ 1,028,754	$ 70,059	$ -	$ 430,491
Goods transferred at a point in time	-	1,291	5,095	-
Total revenue from contracts with customers	$ 1,028,754	$ 71,350	$ 5,095	$ 430,491

Year Ended December 31, 2021

Revenue streams	Electric Revenue	Other Operating Revenue	Other Income-Net	Nonutility Operating Revenue
Member revenue	$ 897,383	$ -	$ -	$ -
Non-member revenue – MISO	42,568	-	-	-
Non-member revenue	14,070	-	-	-
Transmission revenue – related to others	-	53,141	-	-
Utility plant byproduct revenue	-	21,581	-	-
Other income – net	-	-	5,459	-
Ethanol sales	-	-	-	329,496
Ethanol byproduct revenue	-	-	-	90,812
Other revenue	-	-	-	45,113
Total revenue from contracts with customers	954,021	74,722	5,459	465,421
Interest income	-	-	1,103	-
Lease income	-	1,500	-	-
Other income	-	-	-	17,565
Realized and unrealized gains on commodity contracts	-	-	-	(25,010)
Total revenue	$ 954,021	$ 76,222	$ 6,562	$ 457,976
Timing of revenue recognition				
Services transferred over time	$ 954,021	$ 67,292	$ -	$ -
Goods transferred at a point in time	-	7,430	5,459	465,421
Total revenue from contracts with customers	$ 954,021	$ 74,722	$ 5,459	$ 465,421

Year Ended December 31, 2021

Revenue streams	Electric Revenue	Other Operating Revenue	Other Income-Net	Nonutility Operating Revenue
Member revenue	$ 870,332	$ -	$ -	$ -
Non-member revenue – MISO	17,573	-	-	-
Non-member revenue	16,703	-	-	-
Transmission revenue – related to others	-	56,056	-	-
Utility plant byproduct revenue	-	18,759	-	-
Other income – net	-	-	6,004	-
Ethanol sales	-	-	-	169,136
Ethanol byproduct revenue	-	-	-	59,316
Other revenue	-	-	-	5,610
Total revenue from contracts with customers	904,608	74,815	6,004	234,062
Interest income	-	-	1,744	-
Lease income	-	1,496	-	-
RRealized and unrealized losses on commodity contracts	-	-	-	172
Total revenue	$ 904,608	$ 76,311	$ 7,748	$ 234,234
Timing of revenue recognition				
Services transferred over time	$ 904,608	$ 68,437	$ -	$ -
Goods transferred at a point in time	-	6,378	6,004	234,062
Total revenue from contracts with customers	$ 904,608	$ 74,815	$ 6,004	$ 234,062

Electric revenue

Electric revenues consist of wholesale electric power sales to members through the member power purchase and transmission service contracts, to non-members through bilateral contracts, and from participation in the Midcontinent Independent System Operator (MISO) market. All the electric revenues meet the criteria to be classified as revenue from contracts with customers and are recognized over time as energy is delivered or transmitted. Revenue is recognized based on the metered quantity of electricity delivered or transmitted at the applicable contractual or market rates. Electric revenues from members are recorded net of bill credits approved by GRE's board of directions. For the years ended December 31, 2022, 2021, and 2020, GRE issued bill credits to members of $24.8 million, $57.1 million, and $11.0 million, respectively.

The rate schedules within the member contracts include a power cost adjustment, which allows for increases or decreases in member power billings based upon actual power costs compared to plan for certain categories of revenues and expenses. The power cost adjustment was a charge to GRE members of $18.7 million, $46.9 million and $8.3 million for 2022, 2021 and 2020, respectively. Credits or charges are recorded as a decrease or increase, respectively, in member revenues and are recorded in electric revenue in the consolidated statements of operations and comprehensive income.

GRE deferred the recognition of $9.3 million of member electric revenue in 2022 and recognized deferred member electric revenues of $4.4 million and $12.1 million in 2021 and 2020, respectively, under regulatory accounting (see Note 11). Deferred member electric revenues are recorded in electric revenue in the consolidated statements of operations and comprehensive income when recognized.

Other operating revenue

Other operating revenue primarily includes revenue received from the transmission of electricity for others under MISO rate tariffs or under various integrated transmission agreements, revenue from the sale of utility plant byproducts, such as steam and fly ash, and other revenue. All these revenue streams meet the criteria to be classified as revenue from contracts with customers. Transmission revenue for others is recognized over time as GRE stands ready to serve the load with its transmission assets per the agreements. Steam revenue is derived from supplying steam and water to Blue Flint and DSA located adjacent to Coal Creek Station and Spiritwood Station, respectively, and is recognized over time as the steam is transferred through and measured at the interconnection point. Fly ash is marketed and sold to external customers by a third party with whom GRE has a marketing agreement. Fly ash revenue is recognized as of the point in time when the third party completes the resale to the external customer.

Other income – net

Other income – net primarily includes income from miscellaneous work performed for others and the operation of an energy recovery plant. The work for others relates to services provided by GRE to its members (or third parties) that is not included in the rate charged for electricity under the member power purchase and transmission service contracts.

Nonutility operating revenue

Nonutility operating revenue represents revenues from MAG consolidated operations. For the year ended December 31, 2022, GRE consolidated the operations of MAG through December 1, 2022 (see Note 1). Revenue from the production of ethanol and related byproducts is recognized when obligations under the terms of the respective contracts with customers are satisfied. This occurs with the transfer of control of products and risk of loss is assumed by customers, generally when the product is shipped from the facility. Revenue is measured as the amount of consideration expected to be received in exchange for transferring goods. This recognition represents a point in time satisfaction of the performance obligation. Revenue is also recognized on certain ethanol contracts that utilize future price indexes at the time of title transfer, when the price is estimable using a methodology which reflects future commodity price averages for the settlement month. This recognition represents a point in time satisfaction of the performance obligation. For the year ended December 31, 2021, MAG recognized a gain on loan forgiveness of $6.8 million. This gain is included in nonutility operating revenue in the consolidated statements of operations and comprehensive income.

Subsequent Events—GRE has considered subsequent events for recognition or disclosure through March 6, 2023, the date the consolidated financial statements were available to be issued. All material subsequent events have been disclosed in these consolidated financial statements (see Note 16).

3. Accounting Pronouncements

Recently Adopted

In November 2021, the FASB issued ASU 2021-10, *Government Assistance (Topic 832)*, which seeks to increase transparency of government assistance received by business entities. Disclosures are required for the type of assistance received, the accounting for the assistance, and the effect of the assistance on the financial statements. GRE adopted this ASU on January 1, 2022. GRE has filed claims with the Federal Emergency Management Agency (FEMA) for assistance related to storm damage to GRE assets incurred in 2019 and 2022. These claims totaled $3.1 million. As of December 31, 2022, GRE has not received payment from FEMA related to these claims. GRE's accounts for these payments as an offset to cost of the constructed assets.

4. Leasing Transactions

GRE evaluates contracts that may contain leases, including PPAs and arrangements for the use of equipment, railroad cars, and vehicles. A contract contains a lease if it conveys the exclusive right to control the use of a specified asset. A contract determined to contain a lease is evaluated further to determine if the arrangement is a finance lease. GRE recognizes right-of-use assets and a corresponding lease liability at the lease commencement date.

GRE has elected the practical expedient under which non-lease components, such as asset maintenance costs included in payments, are not deducted from minimum lease payments for the purposes of lease accounting and disclosure. In addition, leases with an initial term of 12 months or less are classified as short-term leases and are not recognized on the consolidated balance sheet. If a lease contains an option to extend and there is reasonable certainty the option will be exercised, the option is considered in the lease term at inception. If a lease contains an option for early buy-out and there is reasonable certainty the option will be exercised, the option is considered in the lease term and cash flows from inception. GRE has also elected a practical expedient at the time of adoption to continue with the historical treatment for land easement arrangements in effect at the adoption date. As such, GRE has not recognized any lease assets or liabilities for such arrangements. GRE's lease agreements do not contain any material residual value guarantees, material bargain purchase options, or material restrictive covenants.

Operating Leases—GRE entered into various leases for equipment used in its operations under varying terms and conditions, expiring at various times through 2027. The right-of-use assets for operating leases in place at the time of adoption were capitalized on the basis of their remaining payment obligation balances, discounted to present value based on the rate implicit in the lease or on the incremental borrowing rates appropriate for the entity, the leased asset, and the lease terms. The remaining payments for operating lease right-of-use assets are charged to expense on a straight-line basis over the life of the lease.

Finance Leases— GRE entered into various lease agreements which were classified as financing leases. The leases were for railroad cars used in the operation of Spiritwood Station and equipment used in transmission operations and have terms expiring at various times through 2026. With the sale of Coal Creek Station and MAG, their lease balances are no longer included in GRE balances.

During 2022, GRE deconsolidated Falkirk and MAG from its financial statements on May 1, 2022 and December 2, 2022, respectively (see Note 1). The components of lease expense and supplemental cash flow information related to leases for the year ended December 31, 2022, include results for Falkirk for the period ended April 30, 2022, and MAG for the period ended November 30, 2022.

Components of lease expense for the years ended December 31, 2022, 2021, and 2020 include the following (in thousands):

	2022	2021	2020
Operating lease expense:			
Included in operation and maintenance	$ 796	$ 1,643	$ 1,749
Included in fuel	265	3,371	4,222
Included in nonutility operating expense	9,826	10,191	9,802
	$ 10,887	$ 15,205	$ 15,773
Finance lease expense:			
Amortization of right-of-use assets	$ 2,110	$ 3,185	$ 2,445
Interest on lease liabilities	246	485	544
	$ 2,356	$ 3,670	$ 2,989

Costs associated with short-term leases, variable rent, and subleases were immaterial for the years ended December 31, 2022, 2021, and 2020.

Supplemental balance sheet information related to operating and finance leases is as follows (in thousands):

	Classification	December 31, 2022	December 31, 2021
Assets:			
Operating leases	Other long-term assets	$ 2,606	$ 19,124
Finance leases	Utility plant—net	4,176	15,377
Finance leases	Nonutility plant and equipment—net	-	29
Liabilities:			
Current			
Operating leases	Other accrued liabilities and notes payable	$ 585	$ 6,416
Finance leases	Current portion of long-term obligations	1,485	4,996
Noncurrent			
Operating leases	Other noncurrent liabilities	$ 3,160	$ 13,897
Finance leases	Long-term obligations—less current portion	2,775	9,376

The weighted average remaining lease terms and weighted average discount rates are as follows:

	December 31 2022
Weighted average remaining lease term (in years)	
Operating leases	3.1
Finance leases	2.4
Weighted average discount rate	
Operating leases	3.15%
Finance leases	2.84%

As of December 31, 2022, maturities of lease liabilities were as follows (in thousands):

Years Ending December 31	Operating Leases	Financing Leases
2023	$ 694	$ 1,594
2024	929	1,594
2025	1,211	945
2026	1,134	330
2027	54	-
Thereafter	-	-
Total minimum lease payments	4,022	4,463
Amounts representing interest	(277)	(203)
Present value of minimum lease payments	3,745	4,260
Current maturities	(585)	(1,485)
Noncurrent lease liabilities	$ 3,160	$ 2,775

As of December 31, 2022, there were no material additional operating or financing leases that have not yet commenced.

Supplemental cash flow information related to leases is as follows (in thousands):

December 31	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ (7,059)	$ (11,615)	$ (6,607)
Operating cash flows from financing leases	(246)	(485)	(544)
Financing cash flows from financing leases	(3,799)	(4,977)	(3,119)

5. Long-Term Obligations

The consolidated long-term obligations as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Fi First Mortgage Bonds, Series 2007A, 6.254%, due 2023–2038	$ 483,400	$ 531,400
First Mortgage Bonds, Series 2008A, 7.233%, due 2023–2038	322,997	326,399
First Mortgage Bonds, Series 2008B, 3.107%, due 2023–2023	1,667	3,333
First Mortgage Notes, Series 2009A, 5.0% to 7.15%, due 2023–2024	13,600	22,300
First Mortgage Bonds, Series 2009B, 5.81% to 6.94%, due 2023–2031	150,000	185,000
First Mortgage Bonds, Series 2010D, 4.478%, due 2023–2030	229,000	260,500
First Mortgage Note, Series 2014B, LIBOR plus 1.15%, 5.515% at December 31, 2022, due 2033–2038	100,000	100,000
First Mortgage Note, Series 2015A, 3.76%, due 2023-2028	80,000	95,000
First Mortgage Note, Series 2015B, 4.11%, due 2028-2035	100,000	100,000
First Mortgage Note, Series 2015C, 4.62%, due 2036-2044	100,000	100,000
First Mortgage Note, Series 2015D, 4.70%, due 2036-2044	50,000	50,000
First Mortgage Note, Series 2017A, 3.59%, due 2023-2045	235,000	245,000
First Mortgage Note, Series 2020A, 3.25%, due 2026-2045	200,000	200,000
First Mortgage Note, Series 2022A, 4.58%, due 2023-2042	200,000	-
First Mortgage Note, Series 2022B, 4.98%, due 2042-2045	50,000	-
Syndicated Credit Facility, National Rural Utilities Cooperative Finance Corp, ABR plus 0.125%, 3.375% at December 31, 2021	-	80,000
Department of Energy, 0%, due 2023–2028, 5.2% to 6.1% imputed interest	2,241	2,710
Finance lease obligation, Spiritwood Station railroad cars, 2.75% imputed interest	2,219	3,199
Finance lease obligation, 1.12% to 4.81% imputed interest	2,041	2,503
Finance lease obligations, Falkirk Mine, 0.84% to 5.09% imputed interest	-	8,642
Term Note, Falkirk, 0.36%, due 2023-2026	-	5,126
Term Note, MAG, 5.92%, due 2023-2028	-	48,116
Term Note, MAG, 3.75%, due 2023-2025	-	3,504
Other—at various rates and maturities	3,251	4,788
Subtotal	2,325,416	2,377,520
Less unamortized bond issuance costs	(18,414)	(18,225)
Less unamortized bond discount	(6,318)	(6,908)
	2,300,684	2,352,387
Current maturities	(166,506)	(171,089)
Long-term obligations—net	$ 2,134,178	$ 2,181,298

GRE issues secured debt under an Indenture of Mortgage, Security Agreement, and Financing Statement (Indenture). The Indenture requires GRE to establish and collect rates reasonably expected to yield a specified margins-for-interest level. Under the Indenture, GRE has limitations on the retirement of patronage capital if, after the distribution, an event of default would exist or GRE's members' capital would be less than 20% of total long-term debt and members' capital. Substantially all of the tangible assets of GRE and the power purchase and transmission service contracts with the members (see Note 1) are pledged as security under the Indenture.

The First Mortgage Note, Series 2014B debt agreement has a feature that allows GRE to periodically change how the variable rate is determined or change to a fixed interest rate option, at its election, subject to the applicable provisions in the debt agreement.

GRE has a $300.0 million unsecured revolving credit facility for which National Rural Utilities Cooperative Finance Corporation (CFC) is the administrative agent that expires in May 2026. This facility can be increased, at GRE's option, to $400.0 million subject to certain terms and conditions. As of December 31, 2022 and 2021, the outstanding balance was $0 and $80.0 million, respectively. GRE also has an unsecured line of credit facility with CoBank, ACB (CoBank) for $60.0 million that expires in October 2025. The termination date of this facility can be extended, at GRE's request, subject to certain terms and conditions, on not more than two occasions for an additional period of one year. This facility can also be increased, at GRE's option, to $100.0 million, subject to certain terms and conditions. There were no amounts outstanding on this facility at December 31, 2022 and 2021.

GRE is subject to a number of customary covenants under the Indenture, other debt agreements, and the credit facilities.

Future maturities on long-term obligations as of December 31, 2022, are as follows (in thousands):

Years Ending December 31	
2023	$ 166,506
2024	171,536
2025	172,703
2026	163,283
2027	151,052
Thereafter	1,500,336
	$ 2,325,416

6. Investments

GRE's investments as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Other investments:		
Capital certificate investments—CFC	$ 19,644	$ 19,644
Cooperative investment patronage allocations	14,717	14,145
Total other investments	34,361	33,789
Restricted investments—investments for deferred compensation	18,532	18,851
	$ 52,893	$ 52,640

The capital certificate investments bear interest at a rate of 5% and a portion of them are required under borrowing arrangements with CFC. At December 31, 2022, GRE had no commitments to purchase additional capital certificate investments from CFC. Capital certificate investments are classified as held-to-maturity and reported at amortized cost using the specific identification method.

GRE's cooperative investment patronage allocations are reported at cost plus allocated equities.

GRE's investments held for deferred compensation are reported at fair value (see Note 8).

The investments reported at amortized cost at December 31, 2022 and 2021, are as follows (in thousands):

	Amortized Cost	GROSS Unrealized Gains	GROSS Unrealized Losses	Fair Value
2022				
Long-term investments—held-to-maturity securities—capital certificate investments	$ 19,644	$ -	$ -	$ 19,644
2021				
Long-term investments—held-to-maturity securities—capital certificate investments	$ 19,644	$ -	$ -	$ 19,644

Capital certificate investments have maturities greater than 10 years.

Interest income received on all investments, including cash and cash equivalents, was $5.7 million, $1.1 million, and $1.7 million in 2022, 2021, and 2020, respectively.

7. Derivative Instruments

As part of its risk management program, GRE may periodically use interest rate swaps and swaptions to manage market exposures. Terms and tenor of the swap and swaption agreements are generally structured to match the terms of the risk being managed. Mark-to-market gains and losses related to the interest rate hedging agreements are deferred as regulatory assets or liabilities until the execution of the related debt transaction and the agreements are settled. The amount paid or received at settlement is then deferred as a regulatory asset or liability and amortized to the consolidated statements of operations and comprehensive income as a component of interest expense over the term of the related debt issuance.

GRE is exposed to credit risk as a result of entering into these interest rate hedging agreements. Interest rate hedging contracts entered into by GRE are governed by an International Swap Dealers Association Master Agreement. As of December 31, 2022, all of the counterparties with transaction amounts outstanding under GRE's hedging program are rated investment grade by the major rating agencies. The contractual agreements contain provisions that could require GRE or the counterparty to post collateral or credit support. No amounts have been posted by GRE or the counterparties as of December 31, 2022 or 2021.

See additional information regarding the fair value of these instruments in Note 8 and amounts recorded in deferred charges and regulatory liabilities in Note 11.

GRE enters into contracts for the purchase and sale of commodities for use in its business operations. GAAP requires an evaluation of these contracts to determine whether the contracts are derivatives. Certain contracts that meet the definition of a derivative may be exempted from derivative accounting as normal purchases or normal sales. GRE evaluates all of its contracts at inception to determine if they are derivatives and if they meet the normal purchases or normal sales designation requirements. The commodity contracts that do not qualify for a normal purchases or normal sales designation are recorded at fair value, and the gains or losses are deferred as regulatory assets or liabilities. The realized gains and losses on settled commodity derivatives, which include exchange-traded futures contracts, financial transmission rights, fuel contracts, and a financial settlement energy contract are recognized as purchased power. See additional information regarding the fair value of these derivatives in Note 8.

MAG enters into derivative transactions to hedge its exposure to commodity price fluctuations. In connection with the execution of forward commodity contracts, MAG normally elects to create a hedging relationship by executing an exchange-traded futures contract as an offsetting position. MAG does not enter into derivative transactions for trading purposes.

MAG's derivative gains and losses are included in the consolidated statements of operations and comprehensive income for the years ended December 31, 2022 (prior to deconsolidation), 2021, and 2020, are as follows (in thousands):

	2022	2021	2020
Realized and unrealized gains (losses) recognized from undesignated hedges:			
Nonutility operating revenue	$ 164	$ (25,010)	$ 172
Nonutility operating expenses	880	(26,361)	(6,183)

MAG is exposed to credit and market risk as a result of entering into these contracts. MAG manages the credit risk by entering into transactions with high-quality counterparties. Futures contracts entered into by MAG are governed by an International Swap Dealers Association Master Agreement. MAG manages market risk associated with commodity price contracts by establishing and monitoring parameters that limit the types and degree of market risk that may be undertaken. Actual results could materially differ based on the changes in commodity prices.

The location and fair value of derivative instruments in the consolidated balance sheets as of December 31, 2022 and 2021, are as follows (in thousands):

	Balance Sheet Location	2022	2021
Derivatives in a current asset position, none of which are designated as hedging instruments:			
Interest rate contracts	Derivative instruments—current	$ 15,945	$ 177
Commodity contracts	Derivative instruments—current	89,319	19,335
Total current derivative instrument assets		105,264	19,512
Derivatives in a noncurrent asset position, none of which are designated as hedging instruments:			
Commodity contracts	Derivative instruments—noncurrent	355,076	-
Total derivative instrument assets		$ 460,340	$ 19,512
Derivatives in a current liability position, none of which are designated as hedging instruments:			
Interest rate contracts	Derivative instruments	$ -	$ 24,140
Commodity contracts	Derivative instruments	256	10,248
Total derivative instrument liabilities		$ 256	$ 34,388

8. Fair Value of Financial Instruments

GAAP establishes a framework for measuring fair value by creating a hierarchy for observable independent market inputs and unobservable market assumptions and provide for required disclosures about fair value measurements. Considerable judgment may be required in interpreting market data used to develop the estimates of fair value. Accordingly, the estimates presented herein are not necessarily indicative of the amounts that could be realized in a current market exchange. The use of different market assumptions and/or estimation methodologies may have a material effect on the estimated fair value.

A description of the inputs used in the valuation of assets and liabilities is as follows:

Level 1—Inputs represent unadjusted quoted prices for identical assets or liabilities exchanged in active markets.

Level 2—Inputs include direct or indirect observable inputs other than Level 1 inputs, such as quoted prices for similar assets or liabilities exchanged in active or inactive markets, quoted prices for identical assets or liabilities exchanged in inactive markets, and other inputs that are considered in fair value determinations of the assets or liabilities.

Level 3—Inputs include unobservable inputs used in the measurement of assets and liabilities. Management is required to use its own assumptions regarding unobservable inputs because there is little, if any, market activity in the assets or liabilities or related observable inputs that can be corroborated at the measurement date.

Assets are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. GRE's policy is to recognize significant transfers between levels at December 31.

A summary of the assets and liabilities at fair value at December 31, 2022 and 2021, set forth by level within the fair value hierarchy, is as follows (in thousands):

	Assets at Fair Value as of December 31, 2022			
	Total	Active Markets for Identical Assets (Level 1)	Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents—money market funds	$ 324,730	$ 324,730	$ -	$ -
Restricted investments—deferred compensation:				
Money market funds	3,507	3,507	-	-
Mutual funds:				
Domestic stock funds	5,505	5,505	-	-
Balanced funds	6,023	6,023	-	-
Fixed income funds	1,504	1,504	-	-
International stock funds	1,993	1,993	-	-
Interest rate contracts	15,945	-	15,945	-
Commodity derivatives	444,395	15,855	428,540	-
Total assets	$ 803,602	$ 359,117	$ 444,485	$ -
Liabilities:				
Commodity derivatives	$ 256	$ 256	$ -	$ -
Total liabilities	$ 256	$ 256	$ -	$ -

	Assets at Fair Value as of December 31, 2021			
	Total	Active Markets for Identical Assets (Level 1)	Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash equivalents—money market funds	$ 171,379	$ 171,379	$ -	$ -
Restricted investments—deferred compensation:				
Money market funds	1,939	1,939	-	-
Mutual funds:				
Domestic stock funds	5,501	5,501	-	-
Balanced funds	7,361	7,361	-	-
Fixed income funds	2,071	2,071	-	-
International stock funds	1,980	1,980	-	-
Interest rate contracts	177	-	177	-
Commodity derivatives	19,335	19,335	-	-
Total assets	$ 209,743	$ 209,566	$ 177	$ -
Liabilities:				
Interest rate contracts	$ 24,140	$ -	$ 24,140	$ -
Commodity derivatives	10,248	10,248	-	-
Total liabilities	$ 34,388	$ 10,248	$ 24,140	$ -

For the years ended December 31, 2022 and 2021, there were no significant transfers in or out of Levels 1, 2, or 3.

Money Market Accounts—Fair value is determined using quoted prices in active markets for identical assets.

Mutual Funds—Shares of registered investment companies (mutual funds) are categorized as Level 1. They are valued at quoted market prices available on an active clearing exchange for identical assets.

Interest Rate Contracts—Fair value is determined by comparing the difference between the net present value of the cash flows for the swaps at their initial fixed rate and the current market fixed rate. The initial fixed rate is quoted in the swap agreement and the current market fixed rate is corroborated by observable market data and categorized as Level 2.

Commodity Derivatives—Exchange-traded futures contracts, financial transmission rights, and fuel contracts are valued at active quoted market prices and are categorized as Level 1. Fair value for the financial settlement energy contract is determined by comparing the difference between the net present value of the cash flows of the contract price and the current market price. The contract price is quoted in the contract and the market price is corroborated by observable market data. This contract is categorized as Level 2.

GRE continuously monitors the creditworthiness of the counterparties to its derivative contracts and assesses the counterparties' ability to perform on the transactions set forth in the contracts. Liability positions are generally not adjusted as GRE has the ability and intent to perform under each of the contracts. In the instance of asset positions, GRE considers: general market conditions and the observable financial health and outlook of specific counterparties; forward-looking data, such as credit default swaps, when available; and historical default probabilities from credit rating agencies in evaluating the potential impact of nonperformance risk to derivative positions. Given this assessment, when determining the fair value of derivative assets, the impact of considering credit risk was immaterial to the fair value of derivative assets presented in the consolidated balance sheets.

The estimated fair values of financial instruments carried at cost, other than finance leases, at December 31, 2022 and 2021, are as follows and are provided for disclosure purposes only (in thousands):

	2022		2021	
	Carrying Cost	Fair Value	Carrying Cost	Fair Value
Long-term receivables	$ 2,240	$ 2,387	$ 2,288	$ 2,394
Long-term obligations	2,314,838	2,261,932	2,356,259	2,572,851

The estimated fair values of long-term receivables and long-term obligations, other than finance leases, were based on present value models using current rates available for similar issues with similar credit ratings. These fair value measurements would be characterized as Level 2.

The carrying amounts of remaining financial instruments included in current assets and current liabilities approximate their fair value. For other investments—capital certificate investments, the carrying amount is assumed to approximate fair value as these instruments generally must be held as a condition of financing.

9. Income Taxes

GRE is a nonprofit taxable cooperative subject to federal and state income taxation and is allowed a deduction for margins allocated to members as patronage capital.

GRE had no federal income tax expense in 2022, 2021, or 2020 due to a net loss position in 2022 and the utilization of net operating losses in 2021 and 2020. The net tax loss position in 2022 was primarily the result of the allocation of margins to members, the retirement of utility plant, and the deduction of certain costs for income tax reporting purposes, which were deferred for financial reporting purposes. For the years ended December 31, 2021 and 2020, GRE had $0.6 million and $2.1 million, respectively, of state income tax expense due to state tax laws limiting the utilization of net operating loss carryforwards to fully offset income.

The consolidated deferred income taxes as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
GRE		
Deferred tax assets:		
Net operating loss carryforwards	$ 245,978	$ 64,682
Tax credit carryforwards	18,110	18,148
Other	36,474	35,969
Total deferred tax assets	300,562	118,799
Deferred tax liabilities:		
Coal Creek/HVDC Sale	(198,097)	-
Property related	(100,318)	(102,193)
Deferred regulatory assets	(1,549)	(3,344)
Other	(17,140)	(27,069)
Total deferred tax liabilities	(317,104)	(132,606)
Valuation allowance	(19,413)	(417)
Net deferred tax liability	$ (35,955)	$ (14,224)
Falkirk		
Deferred tax assets	$ -	$ 32,260
Deferred tax liabilities	-	(31,366)
Net deferred tax asset, reported as deferred charges-other	$ -	$ 894

These deferred income taxes result from differences in the recognition of accounting transactions for tax and financial reporting purposes. The primary temporary differences relate to depreciation, retirement benefits, the sale and leaseback transaction that originated in 1996 and terminated in 2008, deferred charges, and certain financial reserves not deductible for tax purposes until paid.

GRE uses regulatory accounting to account for the difference between the accrual based method of accounting for income taxes and the cash based method of accounting for recognizing income tax expense in the consolidated statements of operations and comprehensive income as member rates include actual income taxes paid (see Note 11).

As of December 31, 2022, GRE had a federal and state net operating loss carryforwards of $868.1 million and $911.7 million, respectively, that will be utilized to offset projected taxable income in the carryforward periods. There are $208.1 million of the federal net operating losses that expire in varying amounts from 2029 through 2037, while $660.0 million of the federal net operating losses have no expiration. There are $837.1 million of the state net operating losses that expire in varying amounts from 2024 through 2037, while $74.6 million of the state net operating losses have no expiration. GRE also has a federal tax credit carryforward of $18.1 million. The tax credits expire in varying amounts from 2024 through 2042.

Under GAAP GRE is required to evaluate the recoverability of deferred tax assets and establish a valuation allowance if necessary to reduce deferred tax assets to an amount that is more likely than not to be realized. Significant judgment is required in determining whether valuation allowances should be established, as well as the amount of such allowances. GRE establishes or adjusts valuation allowances for deferred tax assets when we estimate it is more likely than not that we will not be able to realize the value of the deferred tax assets. GRE evaluates all significant available positive and negative evidence as part of the analysis, including past operating results, tax planning strategies, current and cumulative losses, and forecasts of future taxable income. GRE has recorded a valuation allowance against the net operating losses and tax credits that will be not be realized prior to expiration.

In the ordinary course of business, there is inherent uncertainty in quantifying GRE's income tax positions. GRE assesses its income tax positions and records tax benefits for all years subject to examination based upon management's evaluation of the facts, circumstances, and information available at the reporting dates. For those tax positions where it is more likely than not that a tax benefit will be sustained, GRE records the largest amount of tax benefit with a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit has been recognized in the consolidated financial statements. Where applicable, associated interest and penalties will also be recognized as income tax expense.

There are no uncertain tax positions that were material to GRE's results of operations or financial position. GRE has determined that its taxable years ended December 31, 2019 through 2022, are still subject to examination under federal tax statutes. In addition, net operating loss carryforwards dating back to 2009 are subject to review and possible adjustment by taxing authorities. GRE's taxable years ended December 31, 2018 through 2022, are still subject to examination under state tax statutes.

10. Pending Litigation, Contingencies, and Commitments

Midcontinent Independent System Operator (MISO)—GRE is a member of the MISO market, and due to the nature of the market, various disputes and resettlements have taken place and some are still in process. It is the opinion of management that the resolution of the various open MISO disputes and resettlements will not have a material effect on the consolidated financial position, results of operations, or cash flows.

Litigation—GRE is involved in various legal actions arising in the normal course of business. It is the opinion of management that the resolution of such actions will not have a material adverse effect on the consolidated financial position, results of operations, or cash flows.

Future Commitments—GRE is committed to the following estimated expenditures under the various contracts discussed below (in millions):

	2023	2024	2025	2026	2027	Thereafter	Total
Wind energy purchases	$ 111.3	$ 122.7	$ 126.4	$ 171.3	$ 196.1	$ 3,049.3	$ 3,777.1
Other purchased power	62.3	53.2	50.8	24.6	25.1	97.8	313.8
	$ 173.6	$ 175.9	$ 177.2	$ 195.9	$ 221.2	$ 3,147.1	$ 4,090.9

Wind energy purchases—GRE has long-term agreements for the purchase of wind energy from various power suppliers. The agreements have varying terms, and some have extension options. The longest contract term extends through 2053. GRE is obligated to purchase the energy generated from these facilities at fixed prices for the term of the agreements. GRE's expenses for energy purchased under these agreements were $92.9 million, $78.6 million, and $81.4 million for the years ended December 31, 2022, 2021, and 2020, respectively.

Other purchased power—GRE has long-term agreements for the purchase of capacity and energy from various other power suppliers. The agreements have varying terms, with the longest extending to 2045. GRE is obligated to purchase energy at either fixed or variable prices for the term of the agreements. GRE's expenses for energy and transmission purchased under these agreements were $74.6 million, $6.8 million, and $6.4 million for the years ended December 31, 2022, 2021, and 2020, respectively.

Reclamation Guarantee—Falkirk is required by the North Dakota Public Service Commission (PSC) to carry bonds to cover reclamation of mined lands in the event the surface mining and reclamation permit is revoked. These bonds are released by the PSC after a period of time, generally at least 10 years after final reclamation is complete, and it has been determined that the land has been returned to its approved postmining use. Under the PSC's self-bond program, GRE provided a guarantee for the majority of Falkirk's reclamation obligation prior to the deconsolidation of Falkirk. Upon termination of the coal supply agreement and deconsolidation of Falkirk on May 1, 2022 (see Notes 1 and 15), GRE no longer has responsibility for this guarantee.

Letters of Credit—GRE has issued a letter of credit for $18.3 million to MISO in connection with its commodity derivatives, two letters of credit totaling $8.6 million related to Spiritwood Station water and infrastructure agreements, and letters of credit totaling $0.1 million for transmission construction projects. No amounts are outstanding as of December 31, 2022 and 2021.

11. Deferred Charges and Regulatory Liabilities

Deferred charges as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Regulatory assets:		
Premiums on refinanced long-term debt	$ 5,305	$ 5,647
Interest rate derivatives	-	25,813
Settled interest rate hedging instruments	89,914	91,420
Purchased power contract settlement	4,310	5,900
Plant retirements	775,888	735,862
Postretirement benefit plans	1,728	9,227
Settled postretirement benefit plan	4,325	4,810
Interest and plant costs	5,488	5,727
Scheduled major outage maintenance	-	6,121
Deferred income taxes	35,955	14,224
Other	512	508
Total regulatory assets	923,425	905,259
Other deferred charges	-	894
Total deferred charges	$ 923,425	$ 906,153
Reported as:		
Deferred charges:		
Financing related	$ 95,219	$ 122,880
Contract settlement	4,310	5,900
Plant retirements	775,888	735,862
Other	48,008	41,511
Total deferred charges	$ 923,425	$ 906,153

Regulatory liabilities as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Regulatory liabilities:		
Incentive-based rate treatment	$ 13,852	$ 14,340
Settled interest rate hedging instruments	3,528	-
Deferred revenue	25,600	16,284
Current derivative instruments	105,264	19,497
Noncurrent derivative instruments	355,076	-
Other	650	800
Total regulatory liabilities	$ 503,970	$ 50,921

Premiums on Refinanced Long-Term Debt—GRE has refinanced various issues of long-term debt, which resulted in the payment of premiums. This amount will be fully amortized by 2038, the maturity date of the 2007A bonds.

Commodity and Interest Rate Derivatives—GRE has commodity and interest rate swaps that have not been settled as of December 31, 2022 and 2021. A regulatory asset or liability is recorded offsetting the fair value liability or asset, respectively, in accordance with regulatory accounting.

Settled Interest Rate Hedging Instruments—GRE settled interest rate swaps related to bond issuances, resulting in payments to or received from the swap counterparties. These settled swaps are amortized over the life of the related debt and the amortization is included in interest expense in the consolidated statements of operations and comprehensive income.

Purchased Power Contract Settlement—GRE had a power agreement with Dairyland Power Cooperative (DPC) to share costs and benefits of a 379 megawatt generating unit (Genoa 3) located near Genoa, Wisconsin. GRE's obligation to purchase energy and capacity through this agreement was terminated through an amendment in 2015 for a cash payment of $83.5 million. GRE recognized this payment as a regulatory asset, of which a portion was related to the termination of GRE's obligation to purchase energy and capacity, and another portion was related to the settlement of GRE's share of the estimated future costs for the plant decommissioning and demolition.

In 2021, DPC retired Genoa 3, implemented an employee severance plan, and began decommissioning and demolition activities, which are expected to continue through 2024. GRE remains obligated for its share of the plant decommissioning and demolition costs. GRE has paid its share of the employee severance and human resource costs and does not expect additional costs in be incurred. In May 2022, GRE began amortization of the regulatory asset and will continue through May 2029. The amortization is included in purchased power in the consolidated statements of operations and comprehensive income.

Plant Retirements—GRE retired Stanton Station in 2017. Regulatory accounting was approved for the remaining undepreciated net plant value and plant closure costs. Decommissioning and demolition activities were completed in 2020. The regulatory asset is being amortized through 2028.

GRE retired Elk River Station in 2019. Regulatory accounting was approved for the remaining undepreciated net plant value and plant closure costs. Decommissioning and demolition activities were completed in 2021. The regulatory asset is being amortized through 2038.

During 2022, GRE closed on a transaction to sell Coal Creek Station and the HVDC system to a third party. As part of the transaction approval, the board of directors authorized regulatory accounting for transaction-related costs, certain contract termination payments, and the financial impacts of assets transferred in the transaction. As of December 31, 2021, GRE had deferred costs for human resource and employee severance costs, Falkirk accelerated depreciation and amortization expenses, and legal and other transaction costs and accruals. In addition, and as discussed in Note 2, GRE deferred the $495.2 million loss on disposal of the Coal Creek Station and HVDC system assets. In 2022, GRE deferred additional transaction-related costs, asset retirement costs, and Falkirk costs. Amortization of the regulatory asset commenced in May 2022 and will continue in varying amounts through 2042.

Postretirement Benefit Plans—GRE has defined benefit pension and postretirement medical plans for certain employees. GRE records regulatory assets for the amounts that are normally reported as accumulated other comprehensive income as these amounts will be recovered in future rates. A regulatory asset has been recorded for GRE's plans of $1.7 million and $3.2 million, as of December 31, 2022 and 2021, respectively. These amounts are adjusted each year as a result of the actuarial remeasurement of the obligations related to these plans. Falkirk also has defined benefit pension and postretirement medical plans. GRE deconsolidated Falkirk on May 1, 2022. A regulatory asset of $6.0 million was recorded for Falkirk's plans as of December 31, 2021.

Settled Postretirement Benefit Plans—During 2016, GRE settled its qualified defined benefit plan, which would have required the recognition of the unamortized actuarial loss as pension expense. GRE recorded a regulatory asset related to the settlement and it is being amortized over a period not to exceed 15 years and included in operation and maintenance expense in the consolidated statements of operations and comprehensive income.

Interest and Plant Costs—During 2010 and 2011, GRE deferred facility costs for interest, maintenance, and other costs associated with Spiritwood Station. This amount is being amortized over the useful life of the facility.

Scheduled Major Outage Maintenance—GRE defers scheduled major outage maintenance costs for Coal Creek Station and amortizes these costs over the maintenance cycle period, which is three years. The amortization is included in operation and maintenance expense in the consolidated statements of operations and comprehensive income.

Deferred Income Taxes—GRE records income tax expense as income taxes are paid; a regulatory asset is recorded for the difference between deferred tax assets and liabilities. The regulatory asset is adjusted each year for changes in income tax timing differences.

Other Regulatory Assets—Other regulatory assets primarily include the unamortized discount on notes receivable.

Other Deferred Charges—Other deferred charges represent Falkirk's net deferred tax asset.

Incentive-Based Rate Treatment—GRE received approval from the Federal Energy Regulatory Commission for incentive-based rate treatment for the CapX2020 transmission projects and collected a return on investment from MISO while these projects were under construction. GRE recorded amortization expense in an amount equal to the interest capitalized to the project and recorded an offsetting regulatory liability. Now that the projects are complete, the regulatory liability is being amortized over the useful life of the underlying assets and recorded as a reduction to depreciation and amortization expense in the consolidated statements of operations and comprehensive income.

Deferred Revenue—GRE deferred the recognition of $9.3 million of member electric revenue in 2022 and recognized $4.4 million and $12.1 million as member electric revenue for the years ended December 31, 2021 and 2020, respectively, in accordance with regulatory accounting requirements. The remaining deferred revenue will be recognized in member electric revenue in the future as determined by the board of directors.

Other Regulatory Liabilities—Other regulatory liabilities include the unamortized bond discount on certain borrowings.

The regulatory assets and regulatory liabilities are recorded in accordance with regulatory accounting requirements and have all been approved by the board of directors.

12. Employee Benefit Plans

GRE offers various benefit plans to its employees, including health/welfare and retirement plans. Approximately 27% of total employees eligible for these benefit plans are represented by two labor unions under two collective bargaining agreements. One agreement expires at the end of 2023 and the second expires at the end of 2025.

Defined Benefit Plans—GRE has a nonqualified supplemental defined benefit plan covering certain former employees and retirees that is frozen, a qualified defined contribution retirement plan for all employees, and a nonqualified defined contribution plan for certain employees.

The accumulated benefit obligation for the GRE defined benefit pension plans and the accumulated loss not yet recognized as a component of net periodic cost recognized in the consolidated balance sheets as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Benefit obligation	$ 2,638	$ 3,631
Accumulated loss	1,264	2,207

The plan is unfunded as of December 31, 2022 and 2021, respectively.

Net periodic cost for the years ended December 31, 2022, 2021, and 2020, was $0.2 million, $0.3 million, and $0.3 million, respectively.

Weighted-average assumptions used to determine benefit obligations were 5.15% and 4.00% as of December 31, 2022 and 2021, respectively. Weighted-average assumptions used to determine periodic benefit cost were 4.00%, 4.00%, and 4.00% for the years ended December 31, 2022, 2021, and 2020, respectively.

The expected future benefits to be paid as of December 31, 2022, are as follows (in thousands):

Years Ending December 31	
2023	$ 269
2024	263
2025	257
2026	251
2027	244
2028-2032	1,092

Defined Contribution Plans—GRE makes defined contributions to all employees and matching contributions to all eligible employees under a defined contribution retirement plan. GRE made savings and matching contributions to its defined contribution retirement plan of $10.2 million, $11.7 million, and $11.9 million in 2022, 2021, and 2020, respectively.

Postretirement Medical Benefits—Under a previously offered postretirement benefit plan, certain employees are entitled to participate in the GRE medical insurance plan until they reach age 65. Benefits to the retirees are in the form of monthly payments to cover a portion of the premium charged for participation in the program.

Costs for the unfunded postretirement medical plan are recognized in the year the employees render service.

The accumulated benefit obligation for the GRE postretirement medical benefit plan and the accumulated loss not yet recognized as a component of net periodic cost recognized in the consolidated balance sheets as of December 31, 2022 and 2021, are as follows (in thousands):

	2022	2021
Benefit obligation	$ 934	$ 1,479
Accumulated loss	464	971

Net periodic cost for the years ended December 31, 2022, 2021, and 2020, was $0.1 million, $0.1 million, and $0.1 million, respectively.

Weighted-average assumptions used to determine benefit obligations were 5.15% and 4.00% as of December 31, 2022 and 2021, respectively. Weighted-average assumptions used to determine periodic benefit cost were 4.00%, 4.00%, and 4.00% for the years ended December 31, 2022, 2021, and 2020, respectively.

The expected future benefit payments to be paid as of December 31, 2022, are as follows (in thousands):

Years Ending December 31	
2023	$ 116
2024	109
2025	104
2026	99
2027	93
2028-2032	384

Falkirk Benefit Obligations—Falkirk has defined benefit and postretirement medical plans for certain employees. The benefit obligations as of December 31, 2021, were $68.9 million and $1.6 million for the defined benefit and postretirement plans, respectively. The defined benefit plan was a funded plan with a net overfunded status of $16.4 million as of December 31, 2021. As part of the termination of the coal supply agreement on May 1, 2022 (see Notes 1 and 15), GRE is no longer responsible for these obligations.

13. Member Related-Party Transactions

GRE provides electric and other services to its members. GRE received revenue of $901.0 million, $899.1 million, and $871.8 million in 2022, 2021, and 2020, respectively, for these services. GRE received 36.9%, 38.2%, and 37.8% of total member revenue from two members for the years ended December 31, 2022, 2021, and 2020, respectively. GRE had accounts receivable from its members of $140.6 million and $154.2 million at December 31, 2022 and 2021, respectively.

GRE also received various services from the members and paid $3.6 million, $6.0 million, and $10.8 million for these services in 2022, 2021, and 2020, respectively. GRE had accounts payable to the members of $2.3 million and $2.3 million at December 31, 2022 and 2021, respectively.

GRE has notes payable to the members of $55.4 million and $51.2 million at December 31, 2022 and 2021, respectively. These notes relate to funds invested with GRE by the members under a member investment program. These funds are used by GRE to reduce short-term borrowings. The members receive investment earnings based on GRE's blended rate of return for specified investments, adjusted for administrative costs.

14. Asset Retirement Obligations

GAAP requires the recording of liabilities related to asset retirement obligations. An asset retirement obligation is the result of legal or contractual obligations associated with the retirement of a tangible long-lived asset that result from the acquisition, construction, or development and/or the normal operation of a long-lived asset. GRE determines these obligations based on an estimated asset retirement cost adjusted for inflation and projected to the estimated settlement dates, and discounted using a credit-adjusted, risk-free interest rate. GRE allocates the amortization for the offsetting capitalized asset retirement cost to expense using the straight-line method over the remaining useful life of the related long-lived asset being retired.

GRE has recorded obligations related to capping and reclamation of ash disposal sites for certain power plants. As part of the transaction to sell Coal Creek Station and the HVDC system (see Note 15), GRE transferred several of these obligations to the third party, resulting in the removal of $78.2 million in asset retirement obligations.

The EPA regulation of coal combustion residuals (CCRs) requires increased groundwater monitoring, reporting, recordkeeping, and posting related information to the internet. The rule also established requirements related to CCR management, impoundments, landfills, and storage. The rule does allow GRE to continue its byproduct beneficial use program.

Falkirk has an obligation related to the final costs to close its surface mines and reclaim the land disturbed as a result of normal mining operations.

A reconciliation of the beginning and ending aggregate carrying amount of the obligations as of December 31, 2022 and 2021, is as follows (in thousands):

	2022	2021
Balance—beginning of year	$ 288,203	$ 278,902
Obligations recorded as a result of changes in estimated cash flows	1,117	695
Accretion expense	4,815	11,409
Transaction disposals	(264,899)	-
Obligations settled	(1,475)	(2,803)
Balance—end of year	$ 27,761	$ 288,203

These obligations are recorded in other noncurrent liabilities in the consolidated balance sheets with the exception of retired plant obligations expected to be incurred in the upcoming year. Closure of the ash landfill associated with Elk River Station was completed in 2021 and the Stanton Station ash disposal site was completed during 2020. As part of the transaction to sell Coal Creek Station and the HVDC system (see Note 15), the obligation for closing Falkirk's surface mine and reclaiming the land was transferred to the third party for consideration, resulting in the removal of $186.1 million in asset retirement obligations. The overall impact of the transaction resulted in a $264.9 million disposal of asset retirement obligations. The obligations settled and the consideration paid for the transfer of the Falkirk obligation are the only transactions recognized as a use of cash in the consolidated statements of cash flows.

15. Significant Transactions

On May 1, 2022, GRE closed on a transaction to sell Coal Creek Station and the HVDC system to a third party. The HVDC system transmits the energy from Coal Creek Station in North Dakota to the GRE service territory in Minnesota. The transaction also included entry into a purchase power agreement with the third party and entry into a separate agreement whereby GRE operates and maintains the HVDC system for the third party. In conjunction with the transaction, GRE negotiated a purchase power agreement for a wind project to be constructed in North Dakota and delivered to GRE's service territory via the HVDC system. Additionally, as part of the transaction, GRE and Falkirk terminated the coal supply agreement.

On August 8, 2022, GRE and its largest member-owner signed a withdrawal agreement by which their membership in GRE will be terminated. On August 30, 2022, new long-term power supply and transmission service customer contracts were signed that extend through December 31, 2045. The membership termination and transition to the new customer contracts are effective on January 1, 2023.

16. Subsequent Events

As part of the withdrawal agreement signed in 2022 between GRE and its largest member-owner (see Note 15), the former member-owner has the option to redeem its patronage capital over a period of time not solely under GRE's control. In accordance with ASC 480 *Distinguishing Liabilities from Equity*, GRE reclassified the former member-owner's patronage capital as temporary patronage capital on the consolidated balance sheets as of January 1, 2023.

* * *

Management and board of directors

Great River Energy senior staff

David Saggau
president and CEO

Jon Brekke
vice president and chief power supply officer

Mark Fagan
vice president and chief corporate and member services officer

Jim Jones
vice president and chief information officer

Eric Olsen
vice president and general counsel

Priti Patel
vice president and chief transmission officer

Michelle Strobel
vice president and chief financial officer

Louy Theeuwen
director, executive division

Great River Energy board of directors

Chair Bob Bruckbauer
Lake Country Power

Vice Chair Dale Anderson
Kandiyohi Power Cooperative

Secretary Audrey Hjelle
Runestone Electric Association

Treasurer Lee York
Nobles Cooperative Electric

Mike Littfin
Arrowhead Cooperative, Inc.

Gary Stenzel
BENCO Electric

Bill Berg
Brown County Rural Electrical Association

Scott Veitenheimer
Cooperative Light & Power

Margaret Schreiner
Dakota Electric Association

Clay Van De Bogart
Dakota Electric Association

Lonnie Johnson
East Central Energy

Joe Morley
East Central Energy

David Hernke
Goodhue County Cooperative Electric Association

Nancy Utke
Itasca-Mantrap Cooperative Electrical Association

Craig Olson
Lake Country Power

Mike Brasel
Lake Region Electric Cooperative

Randy Hlavka
McLeod Cooperative Power Association

Harold Harms
Mille Lacs Energy Cooperative

Lloyd Kongsjord
North Itasca Electric Cooperative, Inc.

Greg Blaine
Stearns Electric Association

Gary Wilson
Steele-Waseca Cooperative Electric

Michael Thorson
Todd-Wadena Electric Cooperative

Member-owner cooperative CEOs

Agralite Electric Cooperative
Benson
Jenny Stryhn, *general manager and CEO*

Arrowhead Cooperative, Inc.
Lutsen
John Twiest, *general manager and CEO*

BENCO Electric
Mankato
Dave Sunderman, *CEO*

Brown County Rural Electrical Association
Sleepy Eye
Mike Heidemann, *CEO*

Cooperative Light & Power
Two Harbors
Joel Janorschke, *general manager and CEO*

Crow Wing Power
Brainerd
Bruce Kraemer, *CEO*

Dakota Electric Association
Farmington
Ryan Hentges, *president and CEO*

East Central Energy
Braham
Justin Jahnz, *president and CEO*

Federated Rural Electric Association
Jackson
Scott Reimer, *general manager*

Goodhue County Cooperative Electric Association
Zumbrota
Kelly Hovel, *general manager*

Itasca-Mantrap Cooperative Electrical Association
Park Rapids
Christine Fox, *president and CEO*

Kandiyohi Power Cooperative
Spicer
Ryan Nelson, *CEO*

Lake Country Power
Cohasset
Mark Bakk, *general manager*

Lake Region Electric Cooperative
Pelican Rapids
Tim Thompson, *CEO*

McLeod Cooperative Power Association
Glencoe
Ron Meier, *CEO*

Meeker Cooperative Light and Power Association
Litchfield
Luke Johnson, *general manager and CEO*

Mille Lacs Energy Cooperative
Aitkin
Sarah Cron, *CEO*

Minnesota Valley Electric Cooperative
Jordan
Marvin Denzer, *CEO*

Nobles Cooperative Electric
Worthington
Adam Tromblay, *general manager*

North Itasca Electric Cooperative, Inc.
Bigfork
Brad Dolinski, *CEO*

Redwood Electric Cooperative
Clements
Ron Horman, *general manager*

Runestone Electric Association
Alexandria
Al Haman, *CEO*

South Central Electric Association
St. James
Ron Horman, *general manager*

Stearns Electric Association
Melrose
Matt O'Shea, *CEO*

Steele-Waseca Cooperative Electric
Owatonna
Syd Briggs, *general manager*

Todd-Wadena Electric Cooperative
Wadena
Daniel Carlisle, *president and CEO*

Wright-Hennepin Cooperative Electric Association
Rockford
Tim Sullivan, *president and CEO*

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