

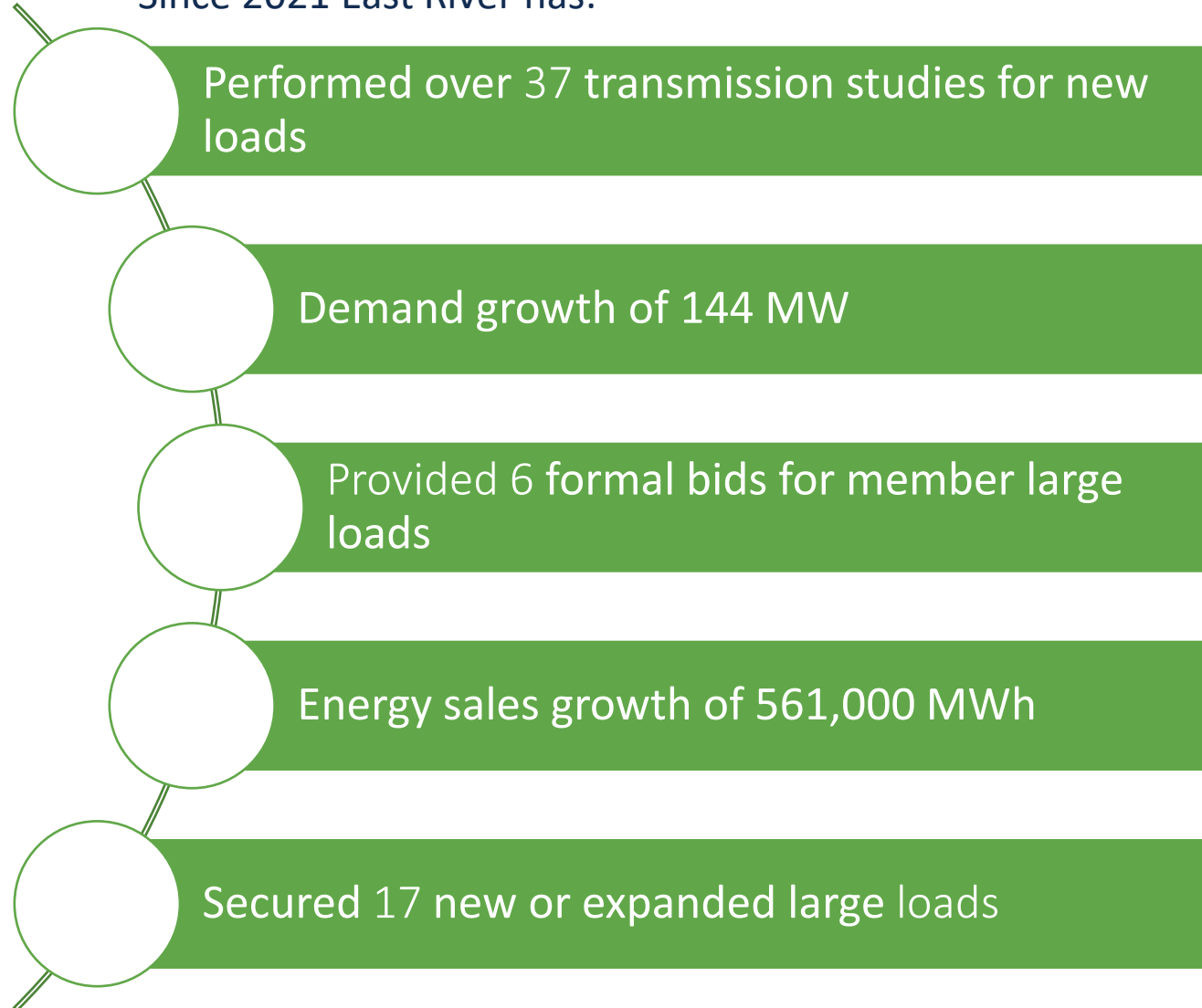
The Process of Progress

Bidding on Large Loads

The Numbers

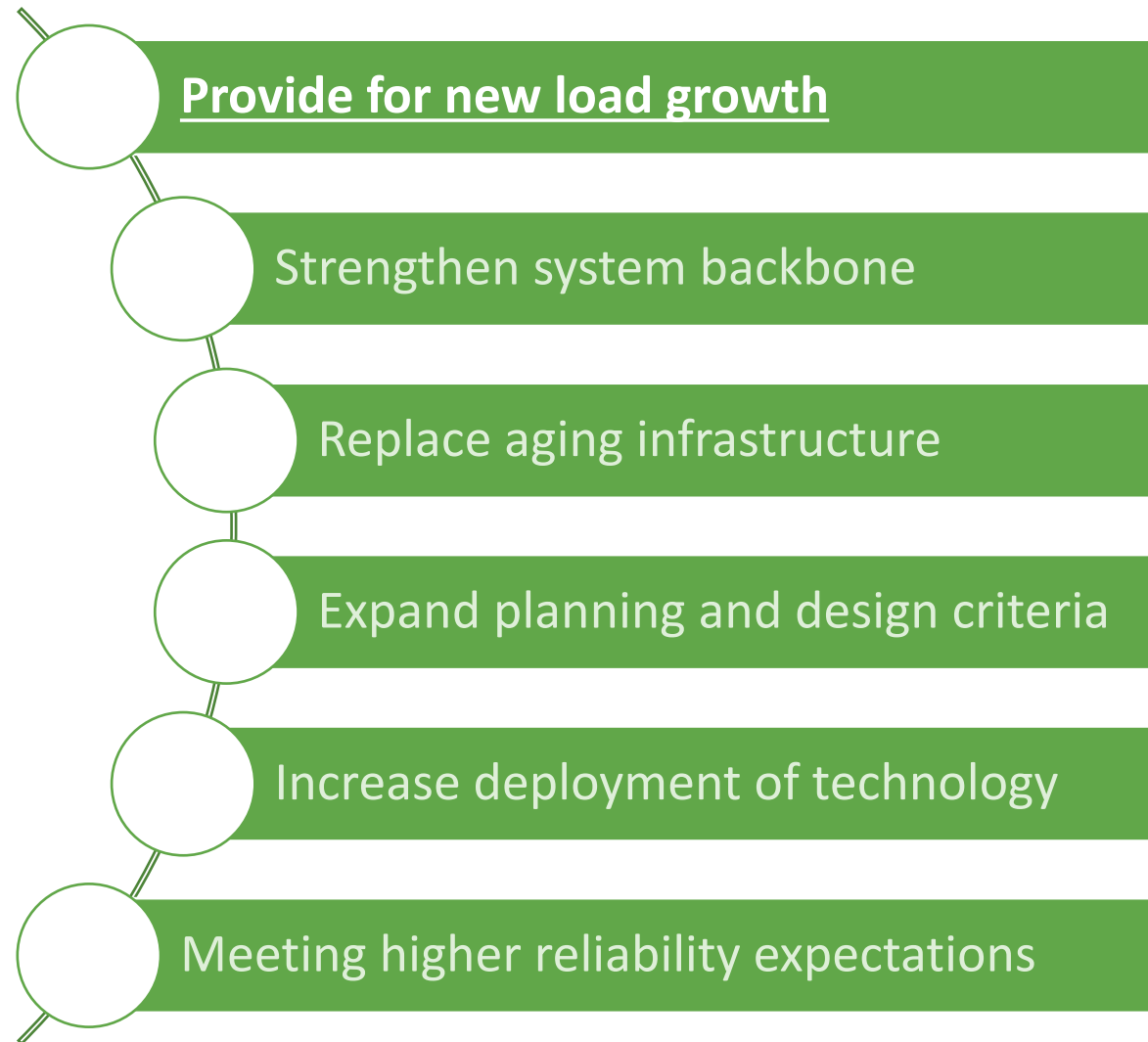
East River and its member systems are growing

Since 2021 East River has:

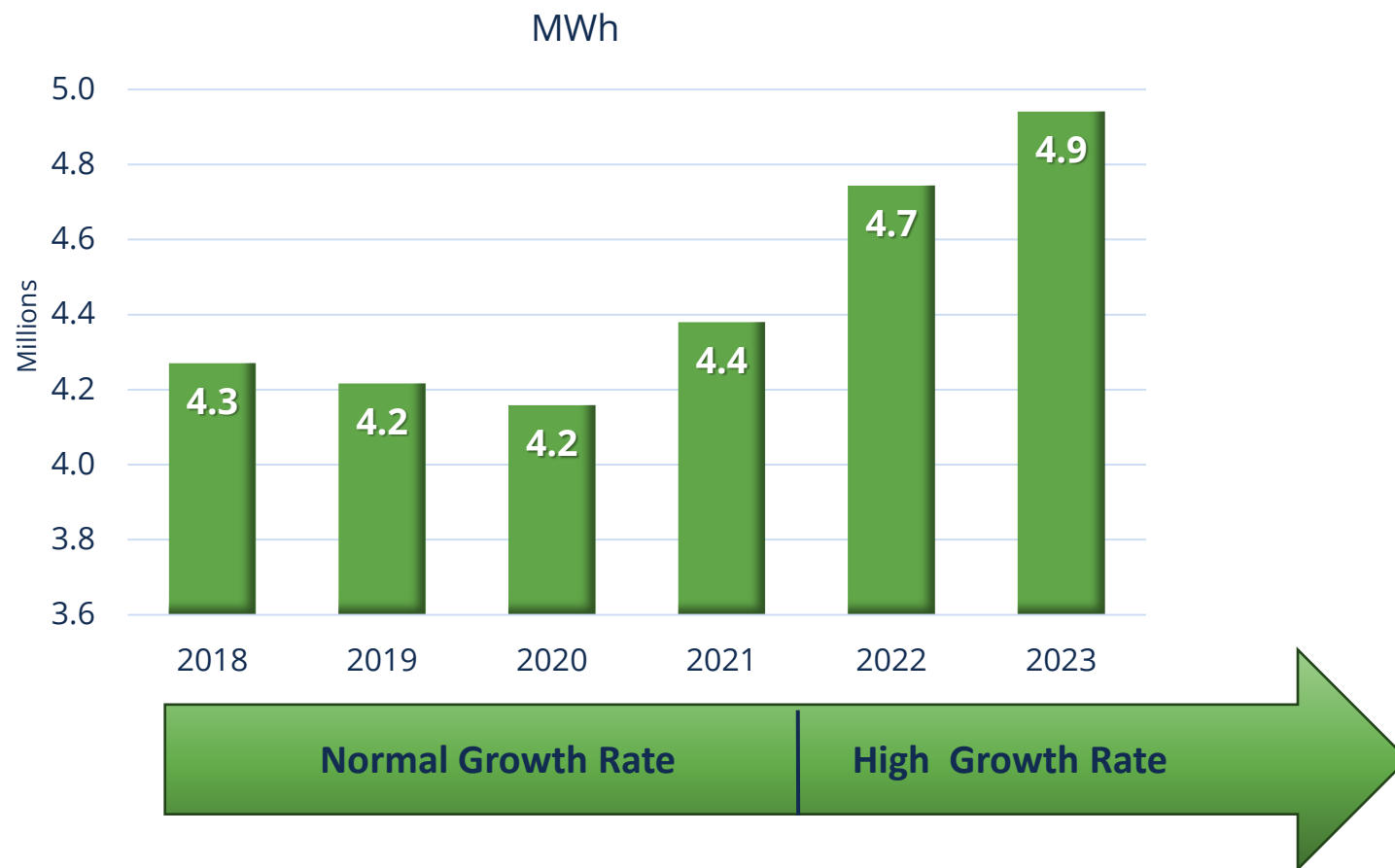


Our Priorities

Transmission System Upgrade Plan Goals



The Change



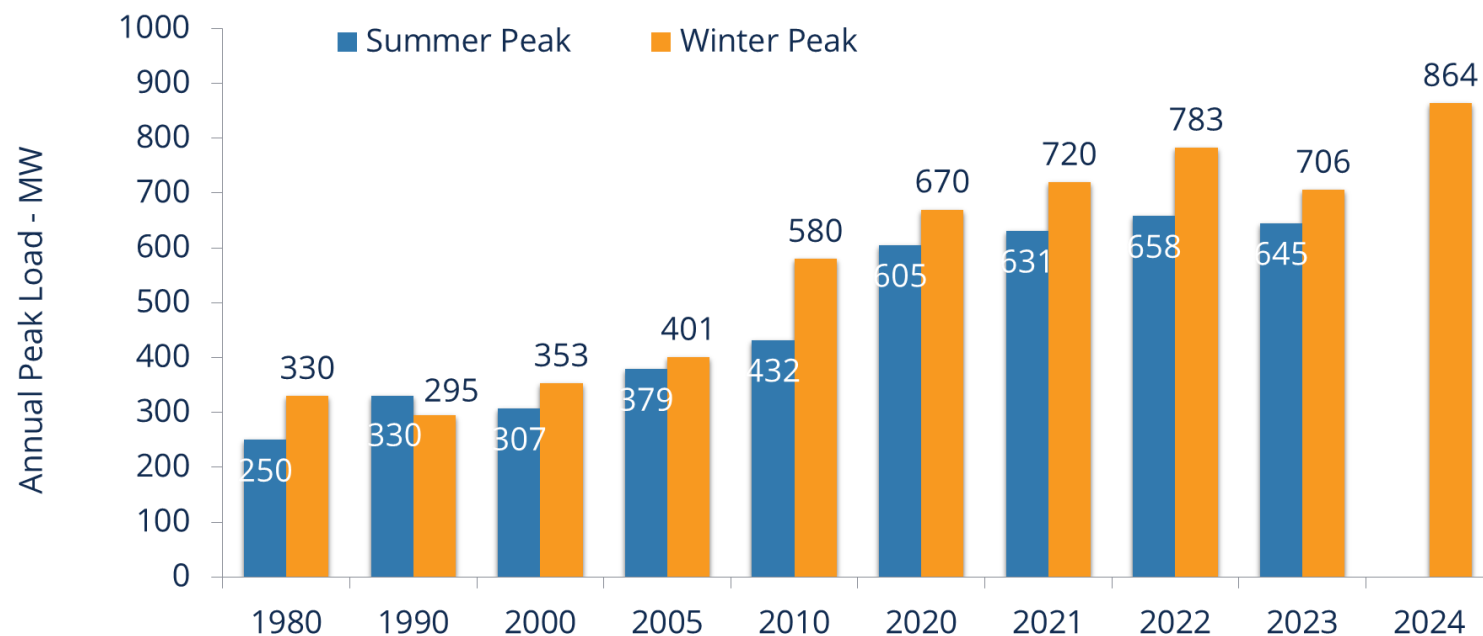
- Meet members needs
- Manage workload
- Recover cost
- Sustainable, responsive process

Growth

Demand Growing rapidly

Summer peak catching winter

Capacity strain at Basin



Large Load Bids Policy

- State law (SD, MN) allows for competitive bids on loads of 2MW or greater
- East River policy calls for use of the Large Load Rate on:
 - New or expansion loads of or increasing by 2MW
 - New or expansion loads of or increasing by 1MW but under 2MW with East River allocated investment estimates over \$1 million
 - East River Board approves all applications of the Large Load Rate

State Law Requirements

Service requirement of the load

Adequate Power Supply

Development or Improvement of the Utility's System including economic factors

Proximity of Adequate Facilities to Serve the Load

Preference of the Customer

It All Starts With a Conversation



Data Gathering

More is better!

Conceptual
(high level,
non-specific)

OR

Tangible
(detailed and
factual)

Transmission Planning



Transmission Planning

Information gathering

System study/System analysis

Mitigation measures/ Infrastructure plan

Cost estimating/Cost allocations

Project scheduling

Transmission Planning

Informational Gathering



Load Interconnection Request Form for Loads 2 MW and Larger

Complete as much information as possible

Project Name:

Section I. Requestor Information			
Contact Name:	<input type="text"/>		
Title:	<input type="text"/>		
Company:	<input type="text"/>		
Address:	<input type="text"/>		
City, State, Zip:	<input type="text"/>		
Phone:	<input type="text"/>	Cell Phone:	<input type="text"/>
E-Mail Address:	<input type="text"/>		
Date of Request:	<input type="text"/>	In-service Date:	<input type="text"/>

Section II. Project Information			
Briefly describe your project:			
<input type="text"/>			
<input type="text"/>			
<i>Attach a site drawing and proposed one-line diagram.</i>			
Location of Proposed Interconnection			
State: <input type="text"/>		County: <input type="text"/>	
Section: <input type="text"/>	Township: <input type="text"/>	Range: <input type="text"/>	Address: <input type="text"/>
East River Transmission Line Name/Number or Substation (if known): <input type="text"/>			
Comments: <input type="text"/>			

Section III. Load Information	
Expected Initial Load (MW): <input type="text"/>	Anticipated Final Load or Expected Load Growth: <input type="text"/>
Power Factor: <input type="text"/>	Date(s) To Achieve Final Load: <input type="text"/>
Is the load expected to vary seasonally? If so, expected seasonal peaks: <input type="text"/>	
Is the load to be considered firm or interruptible: <input type="text"/>	
Load Characteristics: <input type="text"/>	
Service redundancy expectation: <input type="text"/>	
Is there any expected generation behind the meter: <input type="text"/>	
Other information: <input type="text"/>	
Section IV. Equipment Requirements	
Customer Interconnecting Equipment	
Voltage: <input type="text"/>	Ampacity: <input type="text"/>
Interconnection Point (i.e., desired location on customer site): <input type="text"/>	
Expected protection requirement: <input type="text"/>	
Metering location: <input type="text"/>	
Comments: <input type="text"/>	

Please send completed and signed Interconnect Request Form along with any one-line or site drawings to the following address:

East River Electric Power Cooperative, Inc.
PO Box 227
211 S. Harth Ave.
Madison, SD 57042
interconnections@eastriver.coop

*See the attached document for expected costs and next steps of the requester.



Expected costs and next steps of the Requester:

- Initial Capacity Review - \$2,500 (due with the form)
 - This step will review the distribution and transmission system at the load interconnection point to analyze if capacity is available to serve the load.
- Transmission Study - \$7,500
 - This step will analyze the transmission system to determine the upgrades required to provide electric service to the load.
 - This step will develop a project cost estimate, contribution in aid of construction, and schedule of work to provide the upgrades determined in the Transmission study.
 - This step will develop rate options.
- RTO Study ~ \$15,000
 - This step will analyze the proposed load addition and facility changes to the RTO electric grid.
- TOP impacted system study ~ \$20,000
 - This study will analyze the impact of the load interconnection to the BES system.



Transmission Planning

System Study/System Analysis

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Enterprise Substation Request

Transmission System Study

December 29, 2023

Prepared by:
East River Electric Power Cooperative, Inc.
System Planning Department

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Conclusion

East River performed a transmission system study to evaluate the request from SVE to construct a new Enterprise distribution substation near Trent, South Dakota. Three transmission development plans (options) were evaluated:

- Option 1 – Radial Tie to Moody County Transmission Substation
- Option 2 – Radial Tie to Flandreau-Wentworth Networked Line
- Option 3 – Radial Tie to Chester/Colton Circuit

Option 1 is the recommended solution to SVE’s substation request. It provides optimal system performance in powerflow simulations and minimal risk to the reliability of the system. Option 1 is also the most cost-effective option (approximately \$4.6 million) of the options considered and requires the fewest number of facilities to develop (one 115-kV distribution substation, 3.25 miles of 115-kV line, one 115-kV line terminal addition at Moody County).

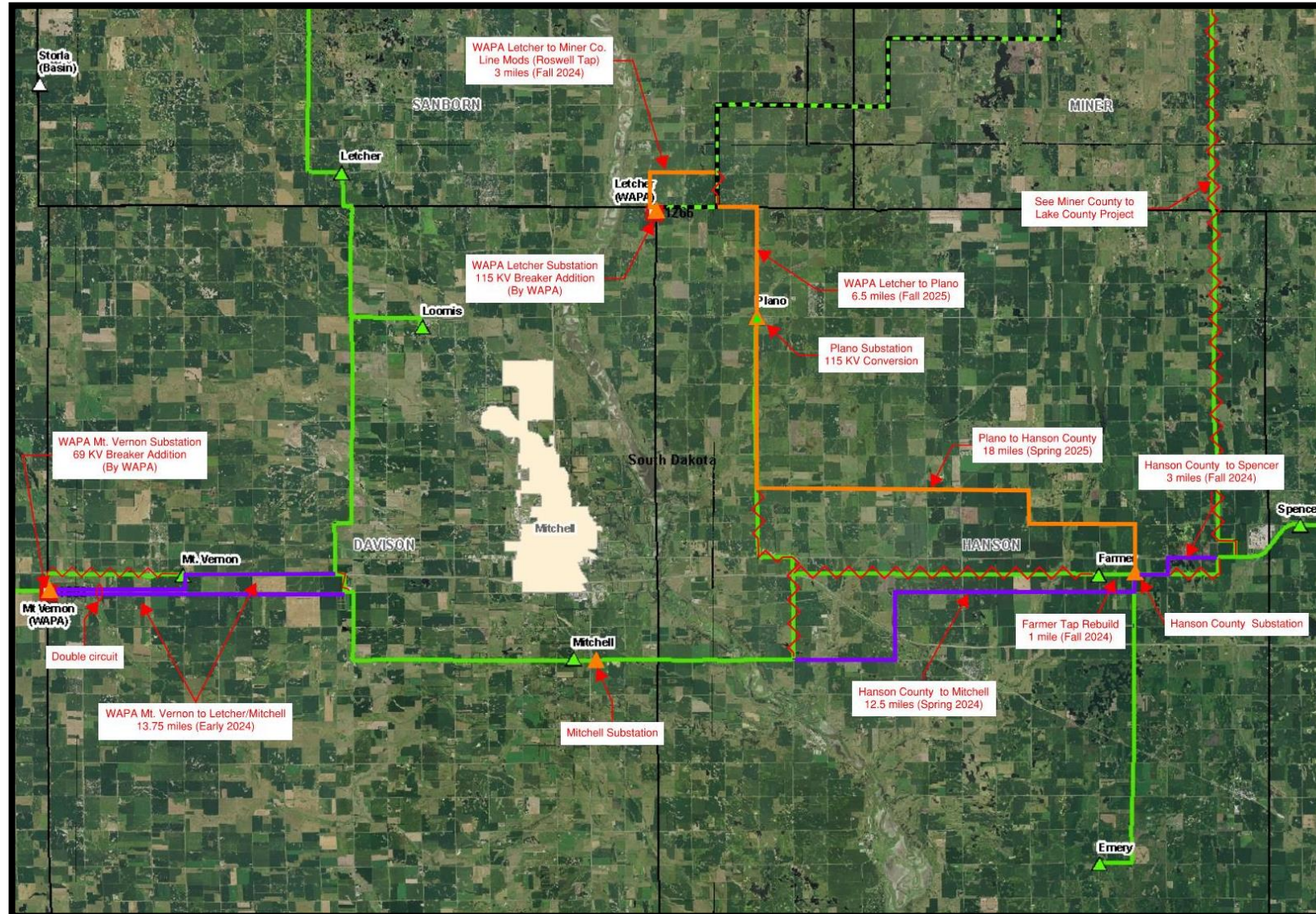
Option 2 is not recommended as a solution to SVE’s substation request; this is primarily due to significant deficiencies encountered during summer peak loading scenarios. To resolve these deficiencies, both a system reconfiguration (transfer Rutland to Volga circuit) and a capacitor bank at Enterprise are required, but these measures do not provide robust system performance. System upgrades planned at Lake County would mitigate many of the low voltages identified but would not eliminate the load-at-risk violations (10-mile radial tap and excessive taps on a networked line). Option 2 is also notably more expensive than Option 1 while providing sub-optimal performance. For Option 2 to be considered feasible, additional upgrades (e.g., adding Option 3 facilities), would need to be explored, which would significantly increase the cost.

Option 3 is not a recommended solution to SVE’s substation request but is feasible as a secondary solution to Option 1. Both Option 3a (serve from Chester circuit) and 3b (serve from Colton circuit) contain deficiencies in summer loading scenarios, but these were resolved with the addition of a 3.6 MVAR capacitor bank at Enterprise. This addition provides adequate system performance in powerflow simulations. There is increased risk to reliability due to the 10-mile radial tap connecting Enterprise to the transmission system for both Option 3a and 3b. To mitigate this increased risk, additional upgrades would need to be explored, which would add significantly more cost.

As noted in the report, the transmission system along the I-29 corridor from Brookings to Sioux Falls experiences numerous undervoltage conditions for certain contingencies in the area before the addition of the Enterprise Substation. East River’s upgrades in the Lake County area will mitigate the low voltages on the East River system, but additional upgrades to the WAPA system in the Brookings area will also need to be implemented to resolve these deficiencies.

Transmission Planning

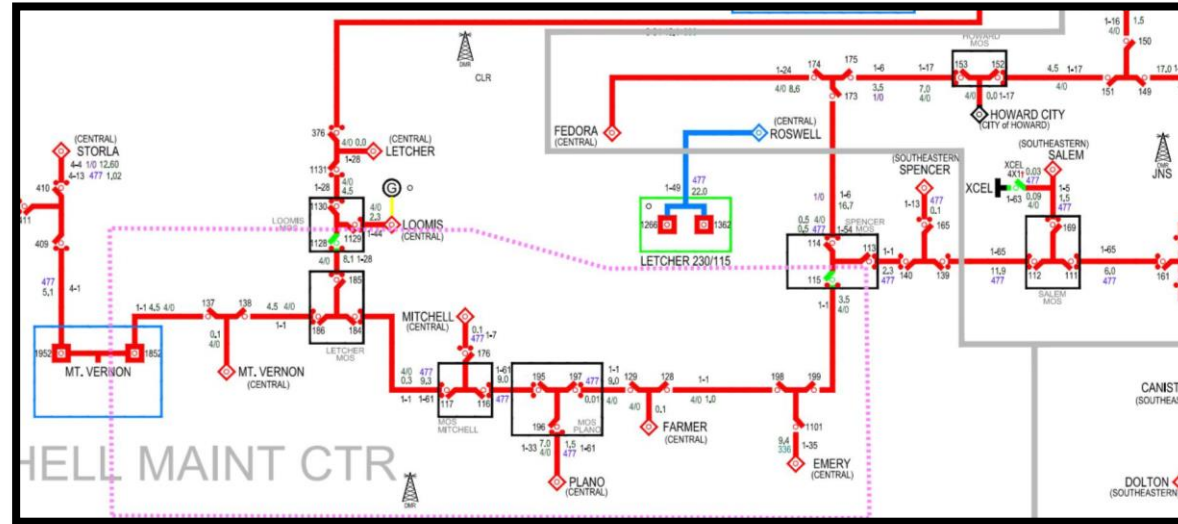
Infrastructure Plan



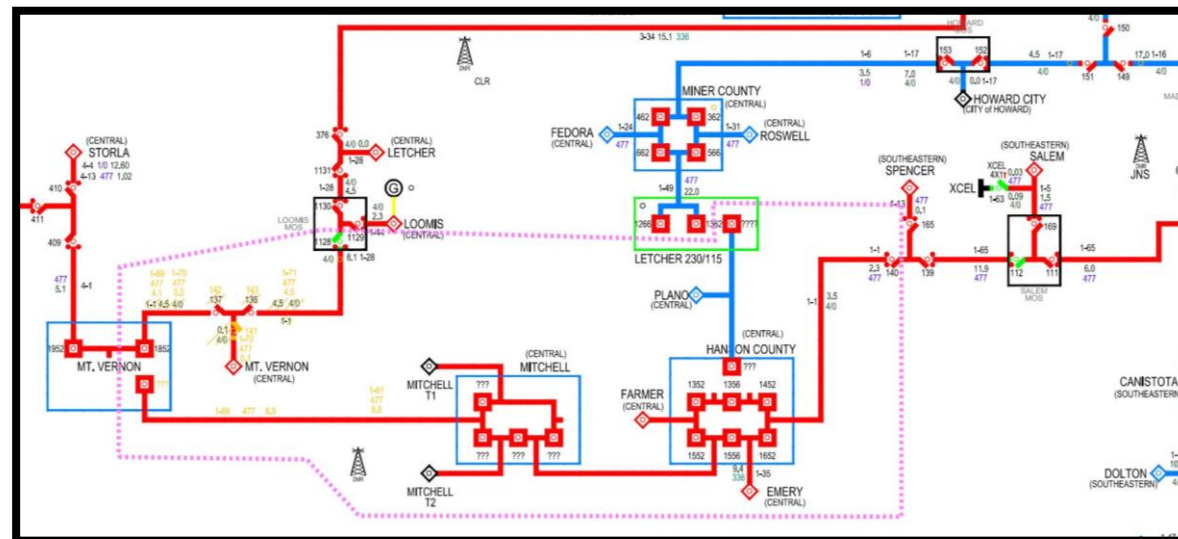
Transmission Planning

Infrastructure Plan

Current



Future



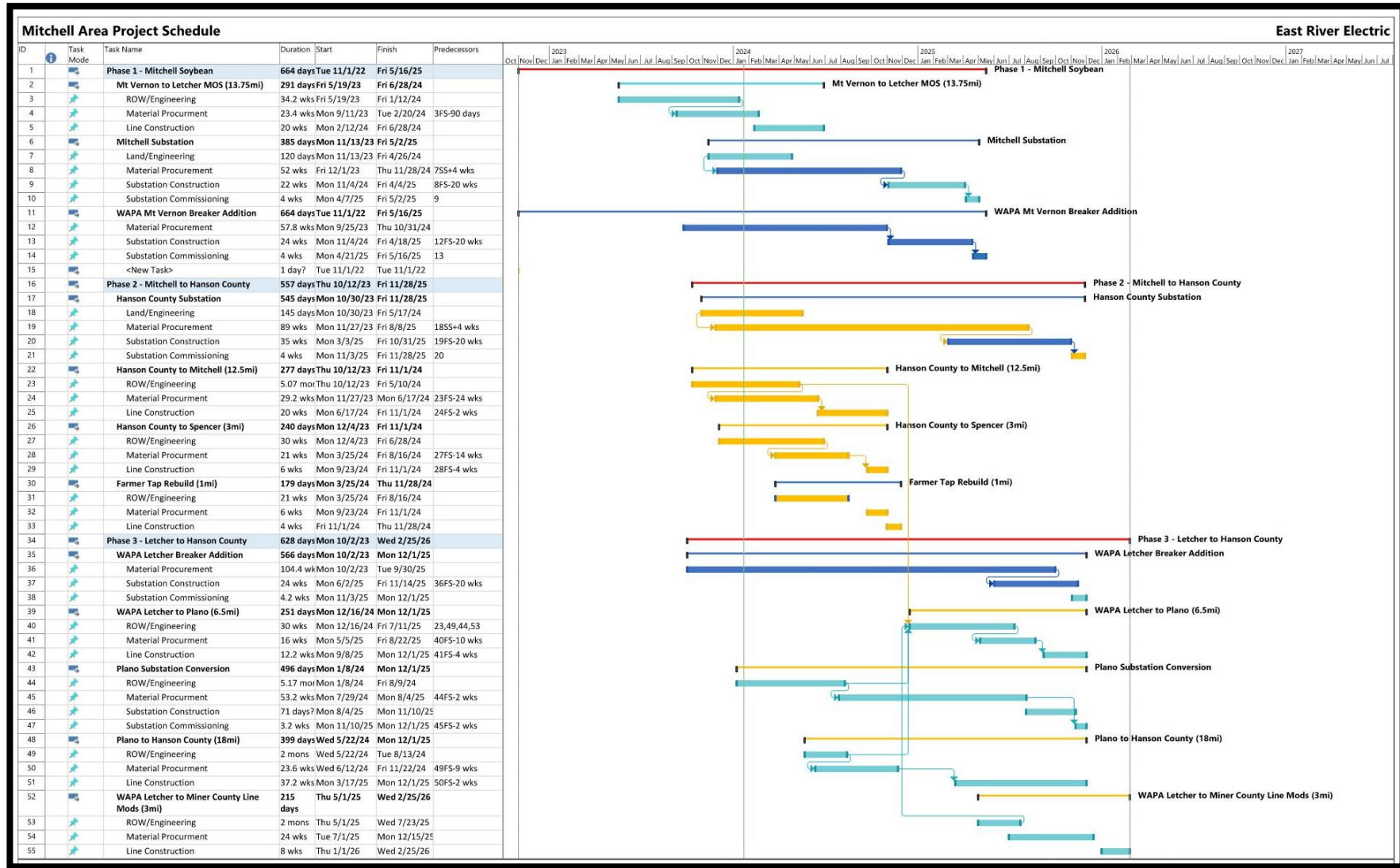
Transmission Planning

Cost Estimating/Cost Allocation

Project	Description	Estimate	SPP	System Improvements	Load
SDSB Substation	New 69 kV ring sub, two 15 MVA transformers, distribution bus with redundancy, Mitchell sub retired	\$8,200,000		\$4,100,000	\$4,100,000
Hanson County 115 - 69 kV Substation	115 kV terminal, 115-69 kV 30/40/50 MVA LTC Auto, 69 kV terminal for SDSP Sub	\$3,650,000		\$3,650,000	
WAPA Letcher 115 kV Bay Addition	New breaker, switches, DE, panel, conduit/grounding/jumpers/etc	\$1,250,000		\$1,250,000	
Plano Substation	115 kV conversion, Breaker add, new switch, new transformer	\$925,000		\$925,000	
WAPA Mt. Vernon to Letcher MOS Rebuild	9 miles, ductile assumed, 477 ACSR, 9 miles of retired line	\$4,140,000		\$4,140,000	
Letcher to Farmer 115-69 kV Sub	24 miles, ductile assumed, 477 ACSR, 8.5 miles of retired line	\$8,250,000		\$8,250,000	
Hanson County Sub Line Modifications	Reroute lines into substation	\$500,000		\$500,000	
	Total	\$26,915,000	\$0	\$22,815,000	\$4,100,000

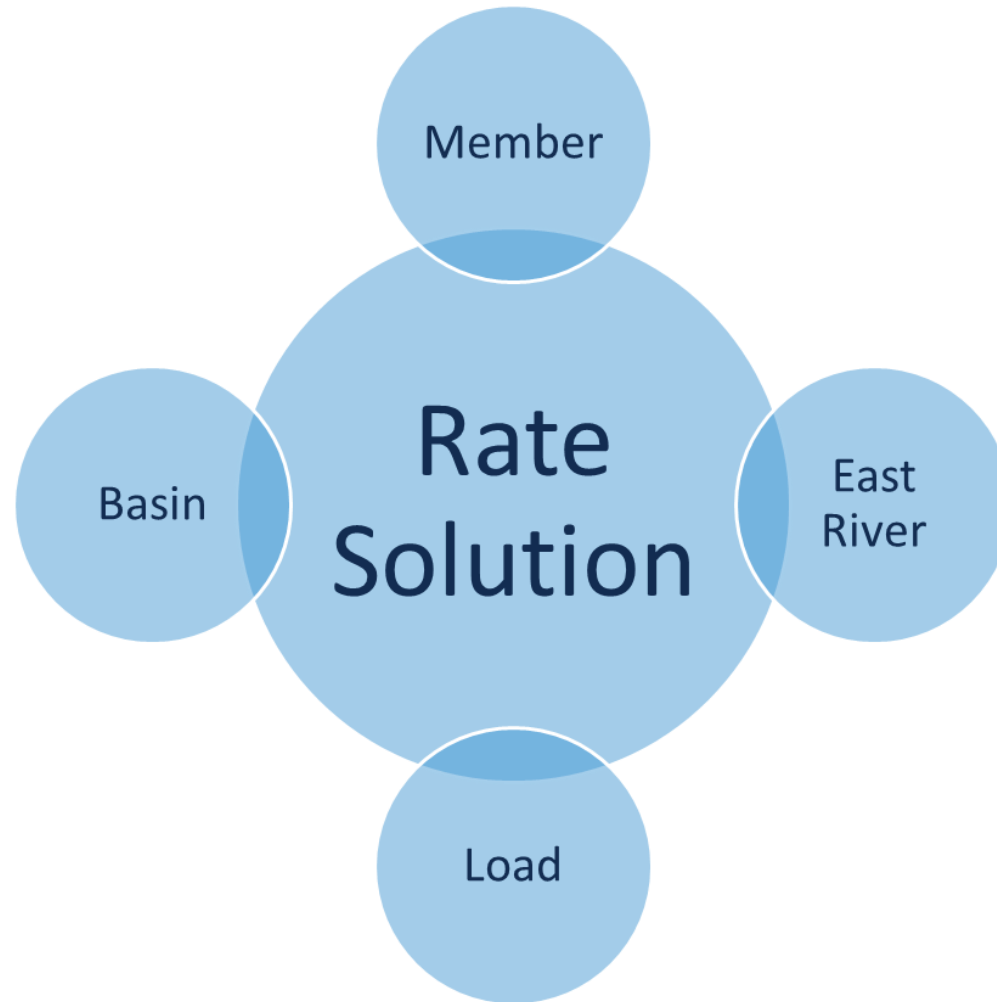
Transmission Planning

Project Schedule



Rate Development

Partnership



All Large Load Rates

Goal = efficient cost recovery

Basin for any purchased power

Current cost of service

Comparison to similar existing rates



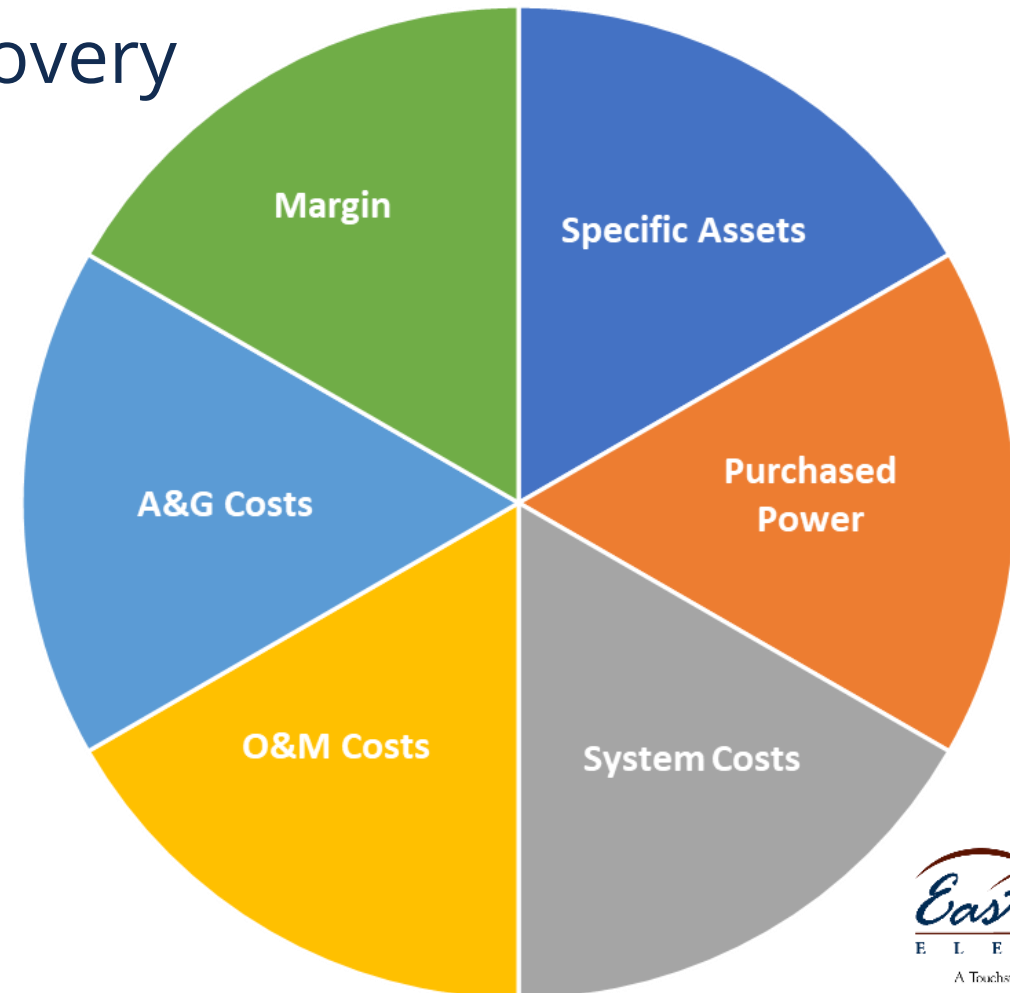
What is Cost Recovery?

Different costs have different recovery

CIAC or Fixed Charge

Demand Charge

Energy Charge



Rate Development Process

Verify Load profile data

Model East River standard cost recovery

Collaborate on Member cost recovery

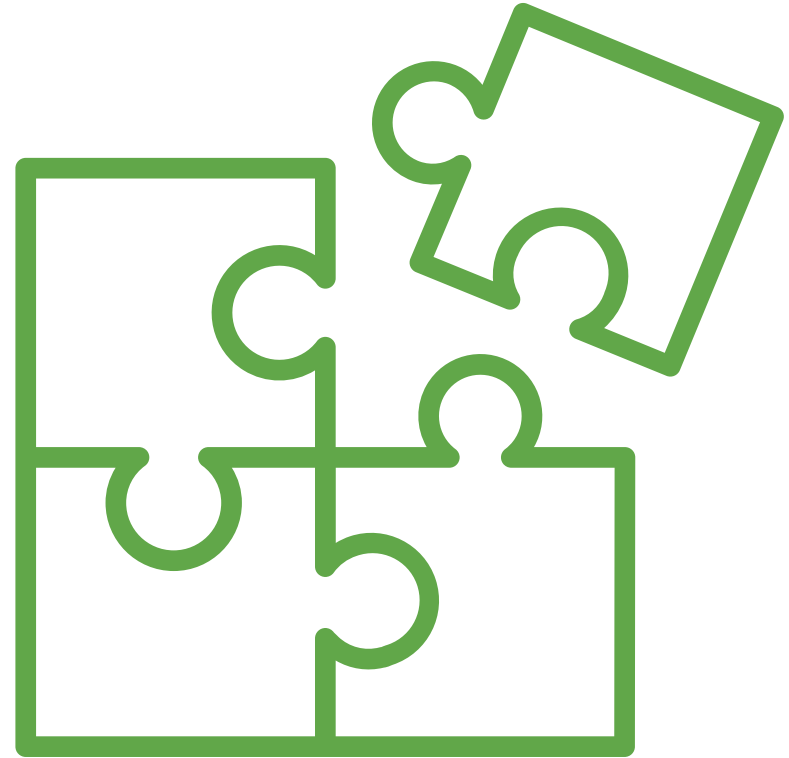
Adjust for Special Considerations

Finalize rate (East River and Member)

Importance of Load Profile

The more we know the more accurate the cost recovery.

Maximum Demand
Coincident Demand
Load Factor
Hourly Load
Outage Planning



Coincident Demand Example

5 MW Load

Peak Demand	5,000 kW	5,000 kW
Coincident Factor	80%	90%
Coincident Demand	4,000 kW	4,500 kW
Cost Recovery Needed	\$150,000	\$150,000
Demand Units (annual)	48,000 kW	54,000 kW
Rate Adder	\$ 3.13 per kW	\$ 2.78 per kW

11% Cost Difference!!

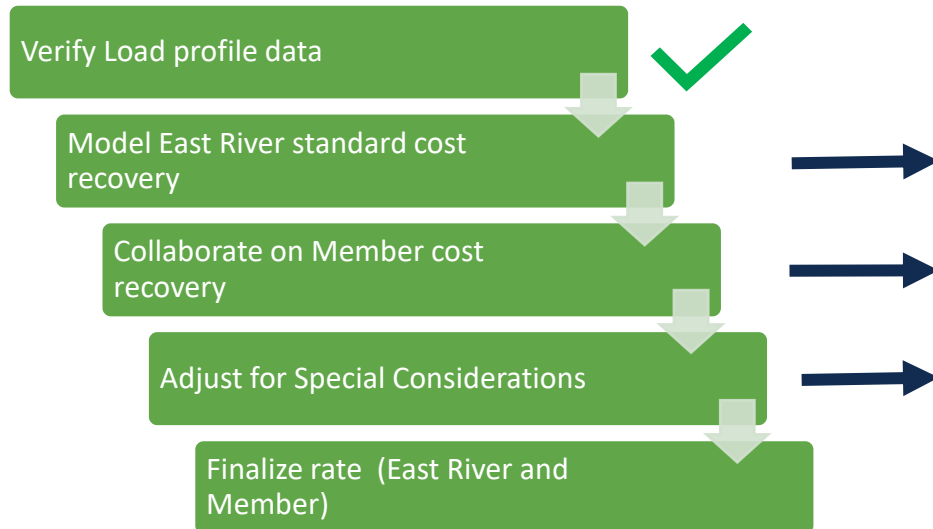
Load Factor Example

5 MW Load

Peak Demand	5,000 kW	5,000 kW
Load Factor	80%	85%
Annual Energy	35,040,000 kWh	37,230,000 kWh
Cost Recovery Needed	\$1,000,000	\$1,000,000
Energy Units (annual)	35,040,000 kWh	37,230,000 kWh
Rate Adder	\$0.0285 per kWh	\$0.0269 per kWh

6.25% Cost Difference !!

Rate Development Process



Collaborate on approach

- Risk assessment
 - Timing
 - Industry
 - Financial standing
 - Competition
 - Local support



Rate Design

- Fixed Charges
- Demand - CP/NCP, 3CP
- Energy – flat kWh, escalating step, declining step

Special Rate Considerations

Highly Competitive Bids

- Are we in a position to compete?
- Can we approximate competitor rates?
- Should we develop an incentive?
 - Risk vs Reward
 - East River and Member participation

What is the cost of adding a new large load?

Special Rate Considerations



CIAC Financing

- Is it a competitive situation?
- Is it a stable industry?
- Do we have confidence in financial standing?
- Are we willing to take risk?

Special Rate Considerations



Special Rates

- Interruptible loads
- Self-Generation
- Multiple site / Combined site

Finalizing the Rate

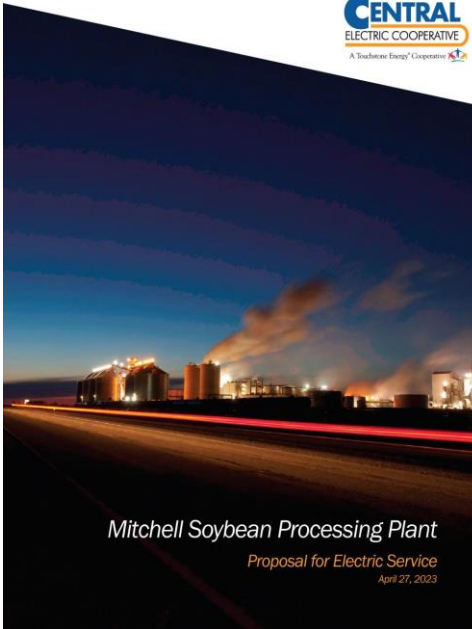
Clear Communication

- Cost to load
- Firm offer or Forecast
- Future rate changes
- Governance



The Proposal

Proposal/Bid



CENTRAL ELECTRIC COOPERATIVE
A Touchstone Energy Cooperative

Mitchell Soybean Processing Plant
Proposal for Electric Service
April 27, 2023



Providing Reliable Energy and Services with a Commitment to Safety and Member Satisfaction

CENTRAL ELECTRIC COOPERATIVE
A Touchstone Energy Cooperative

A GOLD-STANDARD REPUTATION

Thank you for your consideration of receiving electric service from Central Electric Cooperative. As a Touchstone Energy Cooperative we are part of a national network of cooperatives that provide best-in-class service. We pride ourselves on fast, friendly customer service and around-the-clock reliability. You can depend on us.

Ken Schillingen, General Manager
Central Electric Cooperative

LOOKING FOR FINANCING?

The Rural Electric Economic Development (REED) Fund is a nonprofit corporation founded by electric cooperatives to provide capital for community and economic development. With over \$50 million in assets, REED has made more than \$110 million in loans to 374 businesses and community ventures since its inception. Contact us for more information.

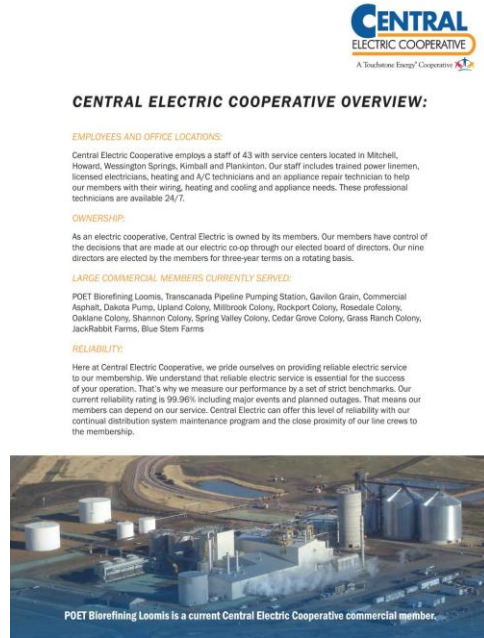
Learn more at reedfund.coop

CENTRAL ELECTRIC COOPERATIVE SNAPSHOT

- Central Electric Cooperative currently serves more than 7,290 meters including a mix of rural members, several towns and large commercial members. Our headquarters is located west of Mitchell, SD, on Betts Road.
- We currently maintain 4,476 miles of power lines across our service area.
- In 2020, more than 40 percent of our generation mix came from renewable energy sources.
- We serve the counties of Aurora, Davison, Hanson, Minner, Sanborn, Jerauld, Buffalo and Brule.
- Central Electric Cooperative powers the towns of Ft. Thompson, Plankinton, Pukwana and Epiphany, along with parts of Chamberlain, Emery and Mitchell.

ONE OF THE HIGHEST SATISFACTION SCORES IN THE NATION

The American Customer Satisfaction Index (ACSI) ranks us at an 85 for customer satisfaction rate. That's higher than the national co-op average, and 10 points higher than BNA Mid American, and the IOU and municipal utility averages.



CENTRAL ELECTRIC COOPERATIVE OVERVIEW:

EMPLOYEES AND OFFICE LOCATIONS:

Central Electric Cooperative employs a staff of 43 with service centers located in Mitchell, Howard, Wessington Springs, Kimball and Plankinton. Our staff includes trained power linemen, licensed electricians, heating and A/C technicians and an appliance repair technician to help our members with their wiring, heating and cooling and appliance needs. These professional technicians are available 24/7.

OWNERSHIP:

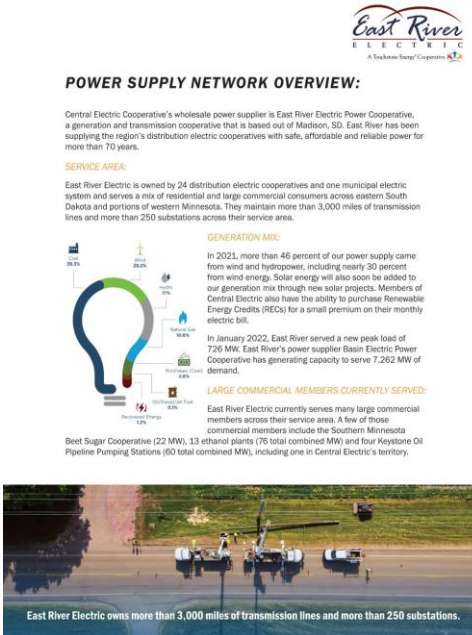
As an electric cooperative, Central Electric is owned by its members. Our members have control of the decisions that are made at our electric co-op through our elected board of directors. Our nine directors are elected by the members for three-year terms on a rotating basis.

LARGE COMMERCIAL MEMBERS CURRENTLY SERVED:

POET Biorefining Loomis, TransCanada Pipeline Pumping Station, Gavilan Grain, Commercial Asphalt, Dakota Pump, Upland Colony, Milbrook Colony, Rockport Colony, Rosedale Colony, Oaklane Colony, Shammon Colony, Spring Valley Colony, Cedar Grove Colony, Grass Ranch Colony, Jack Rabbit Farms, Blue Stem Farms

RELIABILITY:

Here at Central Electric Cooperative, we pride ourselves on providing reliable electric service to our membership. We understand that reliable electric service is essential for the success of your operation. That's why we measure our performance by a set of strict benchmarks. Our current reliability rating is 99.96% including major events and planned outages. That means our members can depend on our service. Central Electric can offer this level of reliability with our continual distribution system maintenance program and the close proximity of our line crews to the membership.



East River Electric
A Touchstone Energy Cooperative

POWER SUPPLY NETWORK OVERVIEW:

Central Electric Cooperative's wholesale power supplier is East River Electric Power Cooperative, a generation and transmission cooperative that is based out of Madison, SD. East River has been supplying the region's distribution electric cooperatives with safe, affordable and reliable power for more than 70 years.

SERVICE AREA:

East River Electric is owned by 24 distribution electric cooperatives and one municipal electric system and serves a mix of residential and large commercial consumers across eastern South Dakota and portions of western Minnesota. They maintain more than 3,000 miles of transmission lines and more than 250 substations across their service area.

GENERATION MIX:

In 2021, more than 46 percent of our power supply came from wind and hydropower, including nearly 30 percent from wind energy. Solar energy will also soon be added to our generation mix through new solar projects. Members of Central Electric also have the ability to purchase Renewable Energy Credits (RECs) for a small premium on their monthly electric bill.

In January 2022, East River served a new peak load of 726 MW. East River's power supplier Basin Electric Power Cooperative has generating capacity to serve 7,262 MW of demand.

LARGE COMMERCIAL MEMBERS CURRENTLY SERVED:

East River Electric currently serves many large commercial members across their service area. A few of these commercial members include the Southern Minnesota Beet Sugar Cooperative (22 MW), 13 ethanol plants (76 total combined MW) and four Keystone Oil Pipeline Pumping Stations (80 total combined MW), including one in Central Electric's territory.

East River Electric owns more than 3,000 miles of transmission lines and more than 250 substations.



Providing Capital. Creating Impact.

RURAL ELECTRIC ECONOMIC DEVELOPMENT, INC. REED FUND

CENTRAL ELECTRIC COOPERATIVE HAS ACCESS TO WORKFORCE HOUSING SOLUTION FUNDS.

The Rural Electric Economic Development (REED) Fund, of which Central Electric is a founding member, has over \$5 million in unrestricted capital specifically dedicated to future housing projects.

- Infrastructure for housing developments
- Multifamily rental housing
- Improvement and renovation of properties for resale or rent
- Creative workforce homeownership incentive concepts

LOOKING FOR FINANCING?

The REED Fund is a nonprofit corporation founded by electric cooperatives to provide capital for community and economic development. With over \$50 million in assets, REED has made more than \$110 million in loans to 374 businesses and community ventures since its inception. Contact us for more information.

Learn more at reedfund.coop

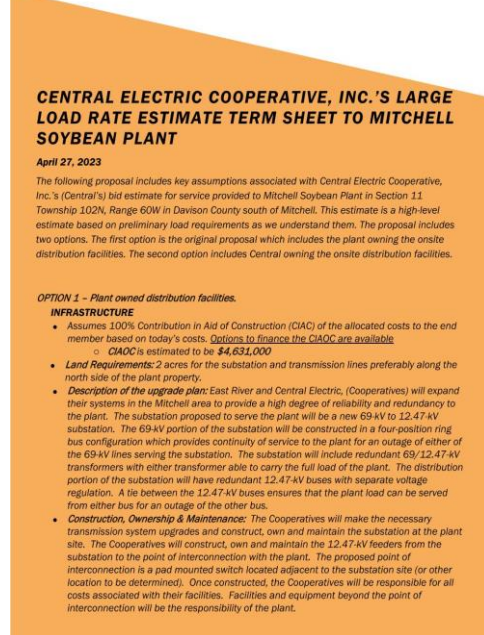
CENTRAL ELECTRIC COOPERATIVE AND THE REED FUND HAVE STRONG VESTED INTERESTS IN COMMITMENT TO COMMUNITY:

- Long-term community and business impacts
- Create and retain employment, facilities, and services
- Funds revolve for future investment opportunities
- Leverage additional investments into the region

If your core project has capital needs, or is interested in partnering on solutions to solve workforce housing or other related project financing, Central Electric Cooperative stands ready, with access to its REED Fund, to improve the viability and profitability of your business!

Contact us to learn more!

An ideal opportunity provider and employer



CENTRAL ELECTRIC COOPERATIVE, INC.'S LARGE LOAD RATE ESTIMATE TERM SHEET TO MITCHELL SOYBEAN PLANT

April 27, 2023

The following proposal includes key assumptions associated with Central Electric Cooperative, Inc.'s (Central's) bid estimate for service provided to Mitchell Soybean Plant in Section 11 Township 102N, Range 60W in Davison County south of Mitchell. This estimate is a high-level estimate based on preliminary load requirements as we understand them. The proposal includes two options. The first option is the original proposal which includes the plant owning the onsite distribution facilities. The second option includes Central owning the onsite distribution facilities.

OPTION 1 - Plant owned distribution facilities.

INFRASTRUCTURE

- Assumes 100% Contribution in Aid of Construction (CIAC) of the allocated costs to the end member based on today's costs. Options to finance the CIAC are available:
 - CIAC is estimated to be \$4,631,000
- Land Requirements:** 2 acres for the substation and transmission lines preferably along the north side of the plant property.
- Description of the upgrade plan:** East River and Central Electric, (Cooperatives) will expand their systems in the Mitchell area to provide a high degree of reliability and redundancy to the plant. The substation proposed to serve the plant will be a new 69-kV to 12.47-kV substation. The 69-kV portion of the substation will be constructed in a four-position ring bus configuration which provides continuity of service to the plant for an outage of either of the 69-kV lines serving the substation. The substation will include redundant 69/12.47-kV transformers with either transformer able to carry the full load of the plant. The distribution portion of the substation will have redundant 12.47-kV buses with separate voltage regulation. A tie between the 12.47-kV buses ensures that the plant load can be served from either bus for an outage of the other bus.
- Construction, Ownership & Maintenance:** The Cooperatives will make the necessary transmission system upgrades and construct, own and maintain the substation at the plant site. The Cooperatives will construct, own and maintain the 12.47-kV feeders from the substation to the point of interconnection with the plant. The proposed point of interconnection is a pad mounted switch located adjacent to the substation site (or other location to be determined). Once constructed, the Cooperatives will be responsible for all costs associated with their facilities. Facilities and equipment beyond the point of interconnection will be the responsibility of the plant.

What's Next

Project award

Member request

Contracts – CIAC/ESA/PPA

Execution of the project

Cost allocation true up

Operation and billing

Potential for contract reopening

Questions



The Process of Progress

Bidding on Large Loads