



Big Rivers
ELECTRIC CORPORATION

**TEAM
CUMBERLAND**
MARCH 28, 2019

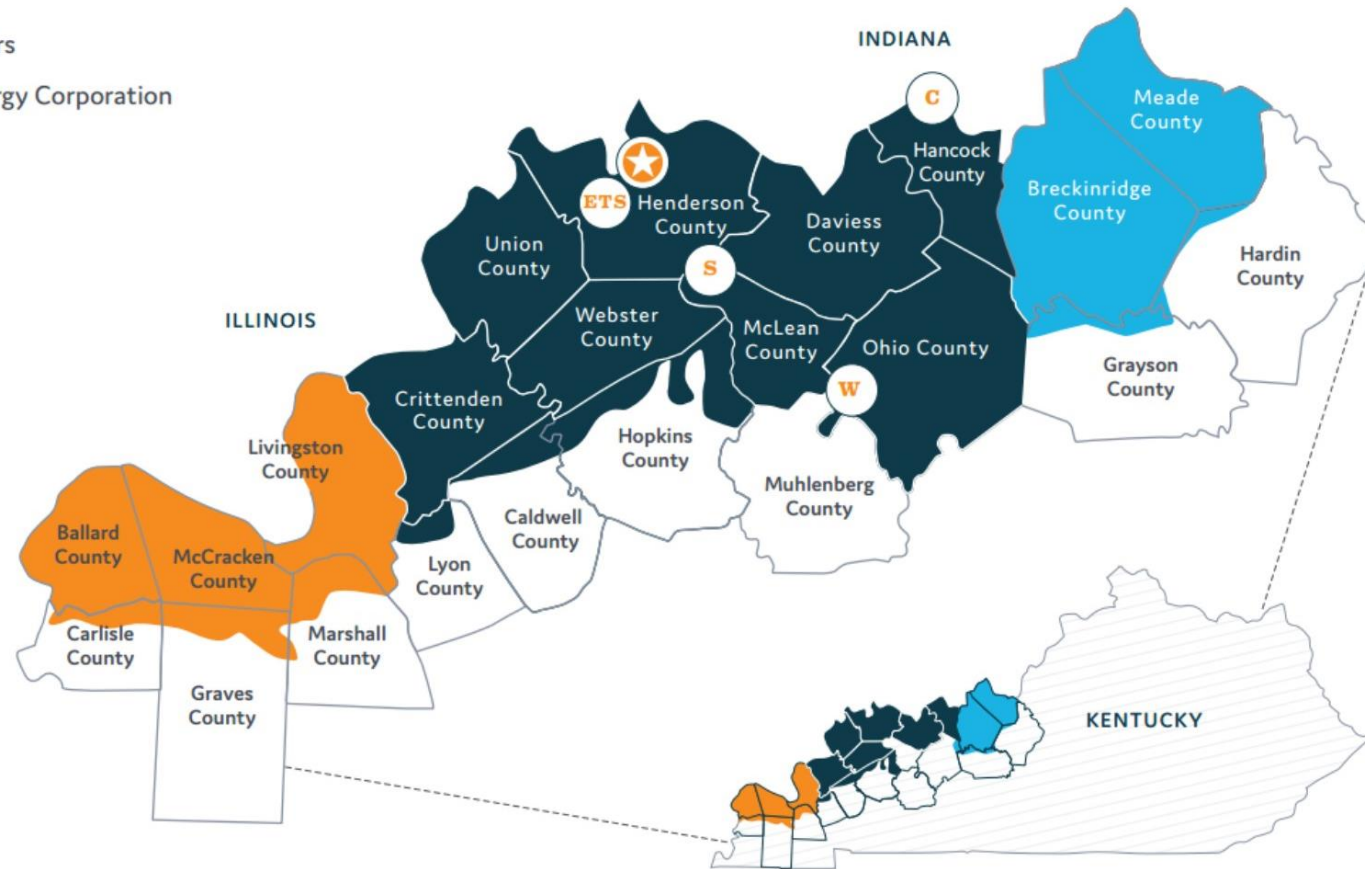


BIG RIVERS ELECTRIC CORPORATION



- **Big Rivers** supplies wholesale electric generation and transmission service to three electric distribution cooperatives (“Member-Owners”):
 - **Jackson Purchase Energy Corporation – Paducah, KY**
 - **Kenergy Corp. – Henderson, KY**
 - **Meade County Rural Electric Cooperative Corporation – Brandenburg, KY**
- We are headquartered in Henderson, KY with 430 employees.
- Big Rivers is a **not-for-profit** electric cooperative that is owned by the Member-Owners (customers) it serves. Combined, our Members provide electric service for more than 116,000 retail homes and businesses in 22 western Kentucky counties.
- Likewise, the Distribution Coops are owned by the customers they serve.
- Big Rivers and its Member-Owners are regulated utilities, which includes oversight by the Kentucky Public Service Commission.

- Big Rivers Headquarters
- Jackson Purchase Energy Corporation
- Kenergy Corporation
- Meade County RECC



SERVICE TERRITORY

BIG RIVERS STRATEGIC PLAN



Our Mission

Safely deliver competitive and reliable wholesale power and cost-effective shared services desired by our Member-Owners

Our Vision

Be viewed as one of the top G&Ts in the country and provide services our Member-Owners desire in meeting future challenges



BIG RIVERS TRANSMISSION



- **1,298** miles of transmission line
- **16,000** acres of right-of-way
- **24** substations and switching stations
- **25** transmission interconnections with 7 surrounding utilities



THE COOPERATIVE DIFFERENCE

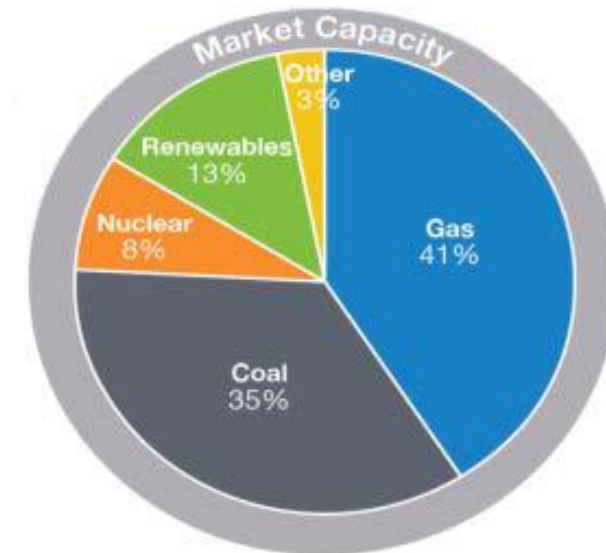


- We operate differently by putting our Member-Owners first.
- We do not have stockholders; the end consumer is our shareholder.
- Cooperatives don't have customers. We have members who own our electric utility and have a say in how it works. A board of locally-elected members oversees the not-for-profit cooperative operations.
- No shareholder profit motive
- Cooperatives provide energy at or below cost of service
- Net margins belong to the individual consumers (Member-Owners)
- Like any business, cooperatives must cover their expenses.
- Cooperatives must maintain equity levels and other financial metrics to qualify for affordable financing and fulfill their lender obligations.
- Cooperative Net Margins are allocated to Big Rivers' Members as Patronage Capital.

MISO MARKET



High Voltage Transmission	65,800 miles
Generating Capacity	174,000 MW
Summer Peak Demand	127,125 MW
Winter Peak Demand	109,307 MW
Customers Served	42 Million



BIG RIVERS GENERATING CAPACITY



Coal-Fired Generation

- Robert Green (Webster County) – 454 MW
- D. B. Wilson (Ohio County) – 417 MW
- Kenneth Coleman (Hancock County) – 443 MW (Idled May, 2014)
- Robert Reid Unit I (Webster County) – 65 MW (Idled April, 2016)

Gas-Fired Generation

- Robert Reid Combustion Turbine (Webster County) – 65 MW

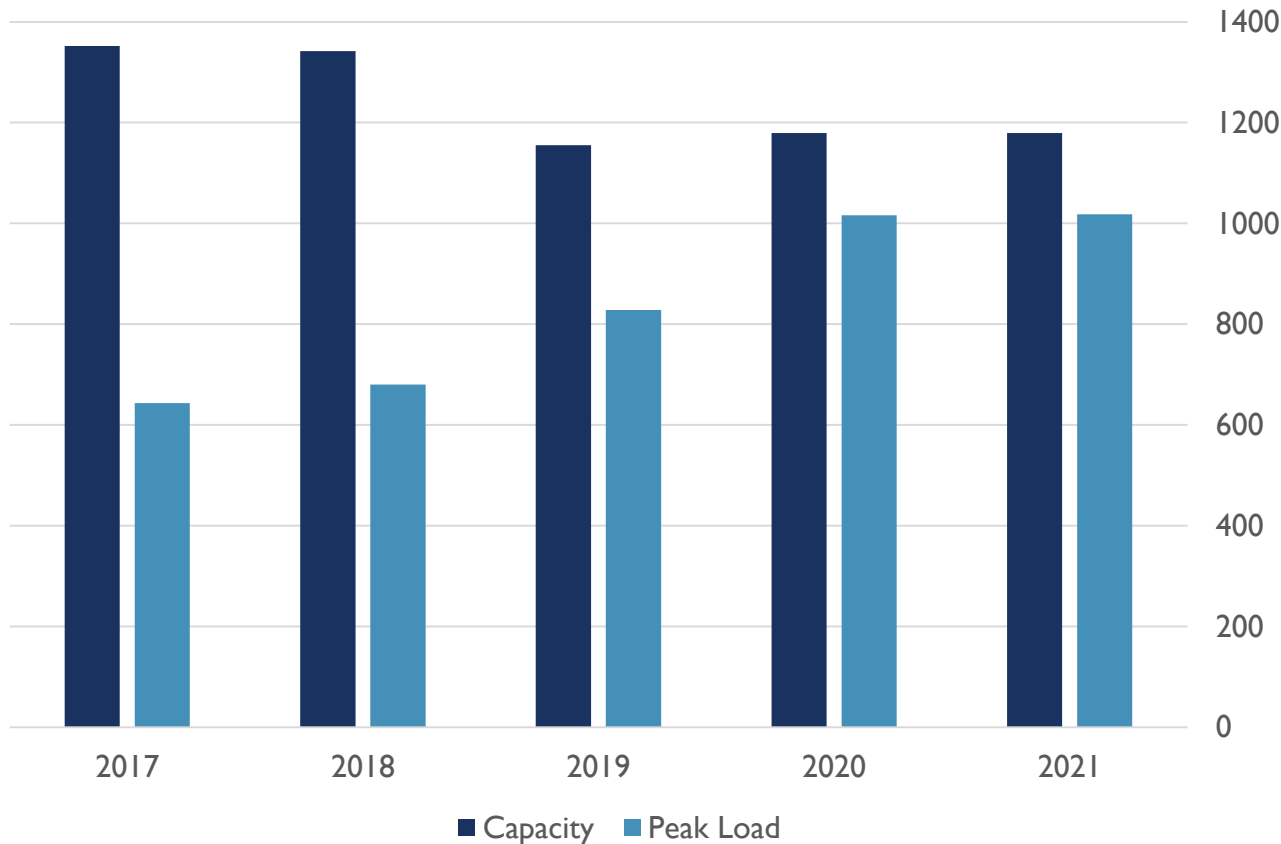
Hydro Generation

- Contracted Capacity from Southeastern Power Administration – 178 MW

Total Capacity 1,622 MW

A combination of demand-side and supply-side actions has resulted in a balancing of capacity and load

BALANCING CAPACITY AND LOAD



- Balancing capacity and load has been achieved through both supply-side and demand-side actions
- Capacity reductions of 13% primarily due to exiting the HMPL Station Two contract
- Increased peak load of 58% is achieved by high margin long-term firm contracts with Nebraska, KyMEA and OMU
- Percentage of capacity committed to load:

	2017	2018	2019	2020	2021
% Committed	48%	51%	72%	86%	86%

Note: Capacity and % Committed do not reflect MISO reserve requirement

5 YEAR HISTORY FORCE MAJEURE REPLACEMENT COST

Since 2014: Big Rivers Replacement Cost for Cumberland System Force Majeure

3/25/2019

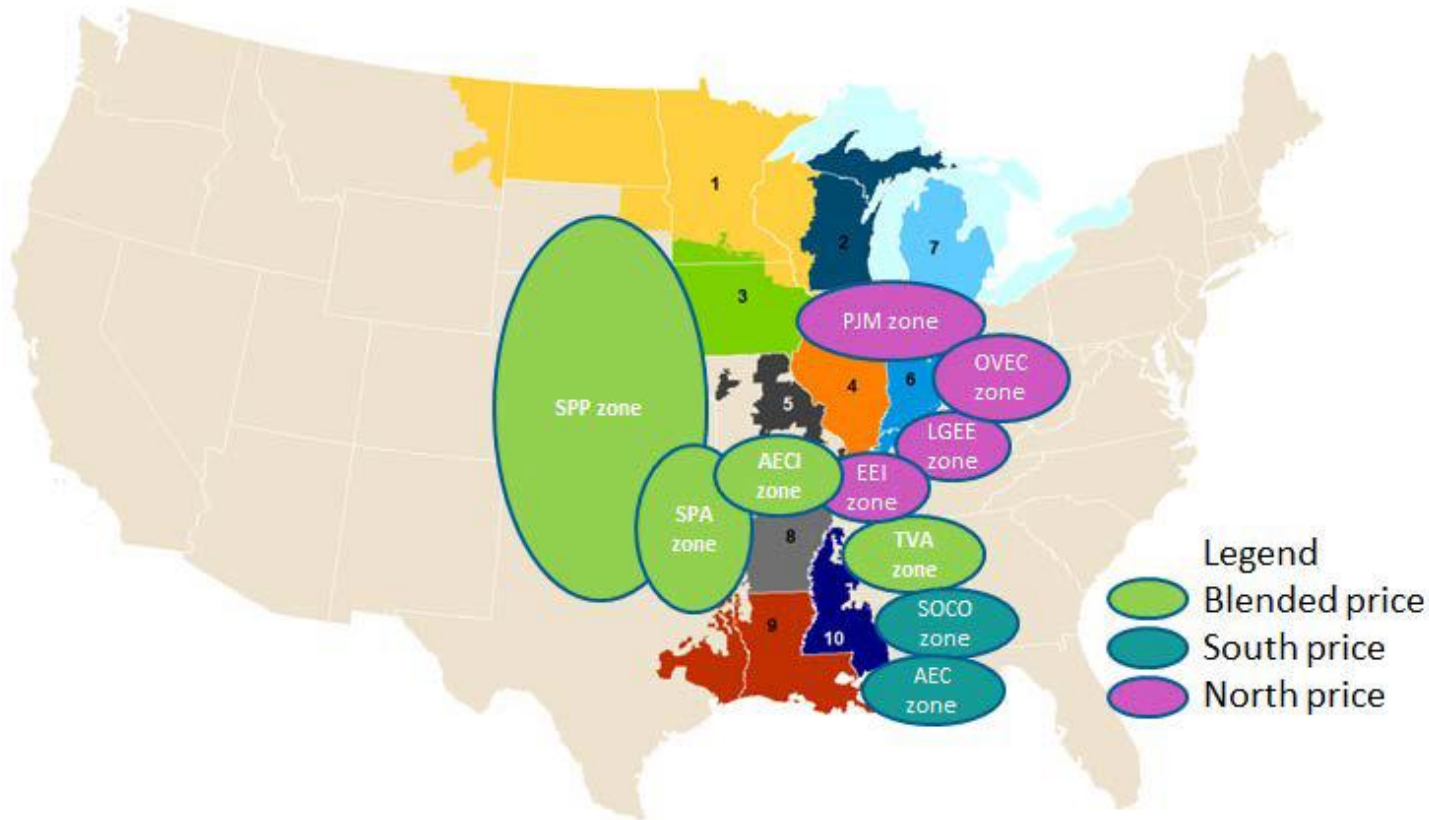
	Capacity							Energy						Total					
Planning Year June 1-May 31	BREC Full Allocation MW		BREC Qualified* Modified RIOP Allocation MW		MW "lost" due to Force majeure	Auction Clearing Price \$/MW-Day	Replacement Capacity Cost (Foregone Revenue) \$	Full Energy Allocation MWH		Modified RIOP Allocation MWH		Replaced MWH	Average LMP/Hour during scheduled "peak" hours \$/MWH	Replacement Energy Cost \$	Total Replacement Capacity and Energy \$	Effective Cost of Replacement Capacity and Energy \$/MWH	Effective cost of Demand, Energy, and Transmission actually paid by Big Rivers for SEPA Cumberland Allocation \$/MWH		
2014/2015	178	-	0	=	178	*	\$16.75	\$1,088,248	267,000	-	222,500	=	44,500	*	\$31.18	\$1,387,510	\$2,475,758	\$55.64	\$37.74
2015/2016	178	-	154	=	24	*	\$3.48	\$30,485	267,000	-	222,500	=	44,500	*	\$28.81	\$1,282,045	\$1,312,530	\$29.50	\$35.45
2016/2017	178	-	154	=	24	*	\$72.00	\$630,720	267,000	-	222,500	=	44,500	*	\$34.39	\$1,530,355	\$2,161,075	\$48.56	\$39.87
2017/2018	178	-	154	=	24	*	\$1.50	\$13,140	267,000	-	222,500	=	44,500	*	\$37.23	\$1,656,735	\$1,669,875	\$37.53	\$38.79
2018/2019**	178	-	154	=	24	*	\$10.00	\$87,600	267,000	-	222,500	=	44,500	*	\$41.80	\$1,860,100	\$1,947,700	\$43.77	\$39.01

5 Years Replacement Capacity and Energy Cost for Big Rivers due to Force Majeure \$9,566,937

* In 2014, MISO disqualified Cumberland Capacity until RIOP implemented

** PY 2018/2019 Average Energy LMP \$/MWH through December, 2018

CAPACITY VALUE EROSION RISK



MISO External Resource Zones

- Beginning Planning Year 2019/2020 Capacity price of imports from TVA Zone is a blend of North and South Auction Clearing Price
- Big Rivers in Zone 6, Cumberland capacity in TVA Zone.
- Historically, when prices are different, South prices have been lower than North, leading to potential lower revenues for Big Rivers than in the past

(FERC Docket ER18-2363)

CONSIDERATIONS



Value to Cumberland Customers

- Balance load and resource needs
- Manage Costs
 - Efficient use of resources
- Need a reliable source of power
- External forces
 - Market prices
 - ISO/RTO rules

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