



# Big Rivers

ELECTRIC CORPORATION

Team Cumberland  
Integrated Resource Planning  
April 2021



# BIG RIVERS ELECTRIC CORPORATION

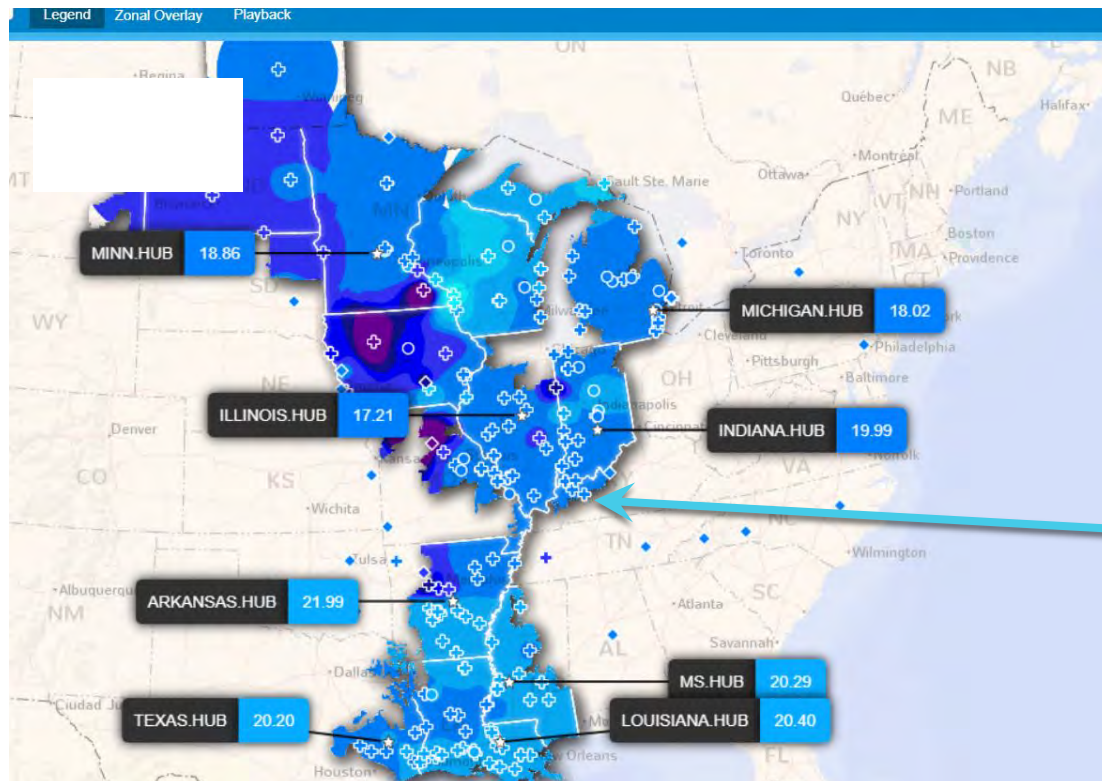


- **Big Rivers** supplies wholesale electric generation and transmission service to three electric distribution cooperatives (“Member-Owners”):
  - Jackson Purchase Energy Corporation – Paducah, KY
  - Kenergy Corp. – Henderson, KY
  - Meade County Rural Electric Cooperative Corporation – Brandenburg, KY
- We are headquartered in Henderson, KY.
- 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 118,000 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.

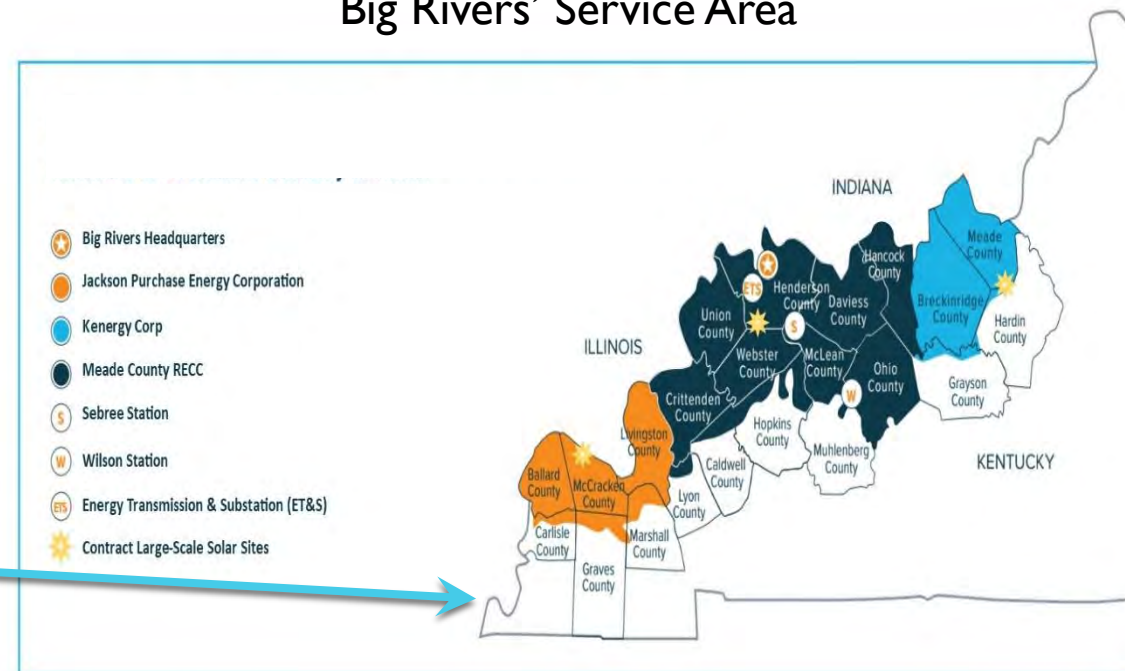
# BIG RIVERS' SERVICE TERRITORY – IN MISO



MISO Footprint



Big Rivers' Service Area



# INTEGRATED RESOURCE PLANNING - OVERVIEW



- Integrated Resource Planning (IRP) is a public process in which planners work together with other interested parties to identify and prepare energy options that serve the highest possible public good.
- The general purpose of a Utility's IRP is to demonstrate the optimal plan for meeting projected power requirements for the next 15-30 years through a portfolio of supply-side and demand-side resources.
- When done properly, IRP provides a structure and an opportunity for utility systems and stakeholders to learn and to develop plans in a co-operative atmosphere. Ultimately, better decision-making processes result in power plans more closely aligned with societal goals.



# INTEGRATED RESOURCE PLAN – INTENDED TAKE AWAYS



- I. Helpful Planning Tool – for nearly all utilities
  - a) Lowest Cost to balance the supply/load requirements
  - b) Considers changes
    - a) Load growth/decline
    - b) Useful life of existing resources
    - c) Expected fuel and capital costs
    - d) Environmental requirements
    - e) Build versus buy
2. Regulatory Requirement – for SOME entities
  - a) Public Input
  - b) Temporal Issues
    - a) Performed every 2/3 years
    - b) 15-30 year forward look

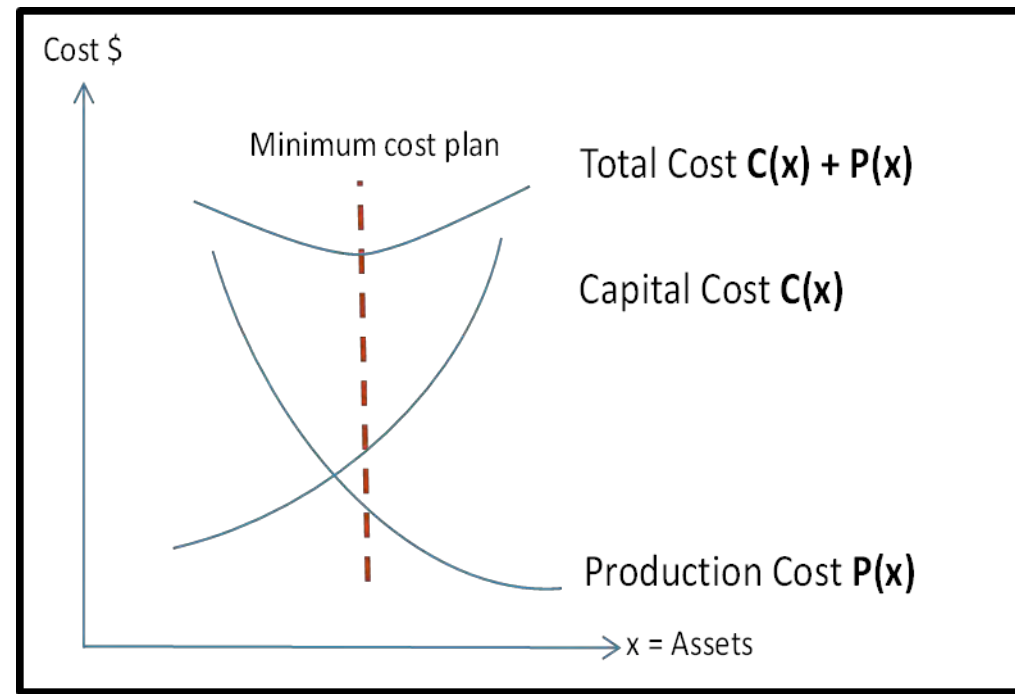
# INTEGRATED RESOURCE PLANNING (IRP)- KENTUCKY



- Kentucky Public Service Commission (KPSC) requires jurisdictional utilities to file an Integrated Resource Plan every 3 years
- Kentucky Administrative Regulation (807 KAR 5:058) mandates a number of requirements for the filing of a utility's IRP.
  - Overview of Utility
  - Planning Process
  - Load Forecast
  - Demand-Side Management and Energy Efficiency Programs
  - Supply Side analysis
  - Electric Integration Analysis
    - Sensitivities
  - Action Plan
    - Short Term (4 years) and Long Term (15 years forward)
- KPSC establishes a procedural schedule, including an opportunity for others (i.e. Industrial Customers, Attorney General, Sierra Club) to intervene.

# LEAST COST OPTIMIZATION

## Energy Exemplar's PLEXOS LT Plan Optimization



# BIG RIVERS' EXISTING, NEW, AND POTENTIAL RESOURCES – 2020 IRP



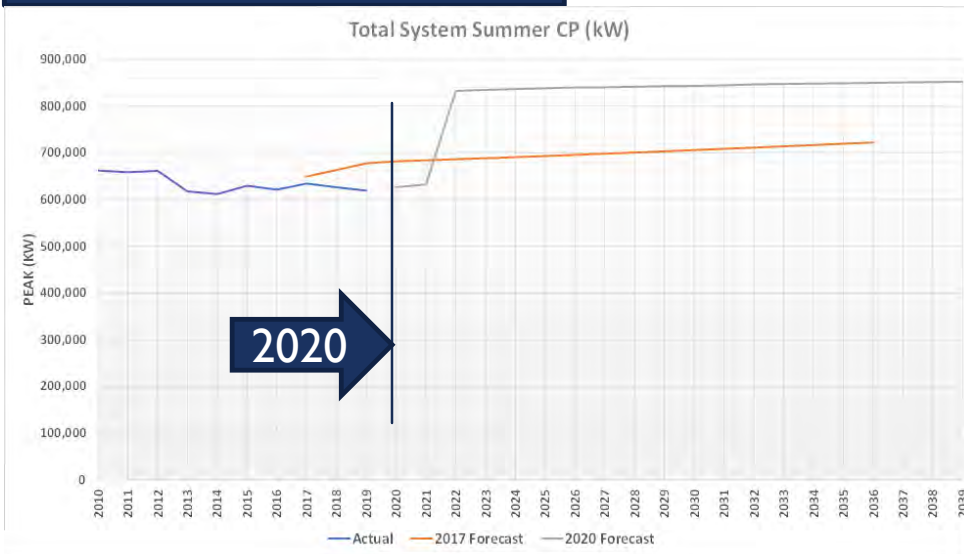
Generation Resources			
Existing (Currently Operating) Big Rivers Assets			
Generation Resource	Capacity, MW	Option	2024-2043
Wilson Unit 1	417	Coal-Fired	X
Green Unit 1	231	Coal-Fired	X
		NG Conversion	X
		Idled	X
Green Unit 2	223	Coal-Fired	X
		NG Conversion	X
		Idled	X
Reid CT	65	NG-Fired	X
		Idled	X
SEPA	178	Continue	X
		Exit Contract	X
<b>Total</b>	<b>1,114</b>		
New or Potential Big Rivers Assets			
Generation Resource	Capacity, MW	Option	2024-2043
Henderson Solar Facility	160	PSC Approved (Built)	X
McCracken Solar Facility	60	PSC Approved (Built)	X
Meade Solar Facility	40	PSC Approved (Built)	X
Natural Gas Combined Cycle	592	10 MW increment located at Seabee	X
		10 MW increment located at Coleman	X
Natural Gas Combustion Turbine	237	Build asset	X
Market (PPA - Block)	800	10 MW increment up to 800 MW	X



# BIG RIVERS IRP FILED SEPTEMBER, 2020

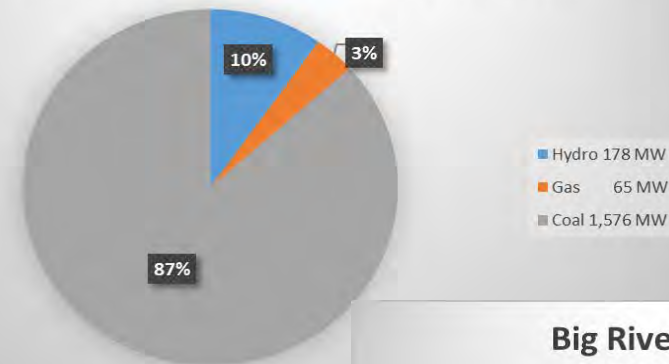


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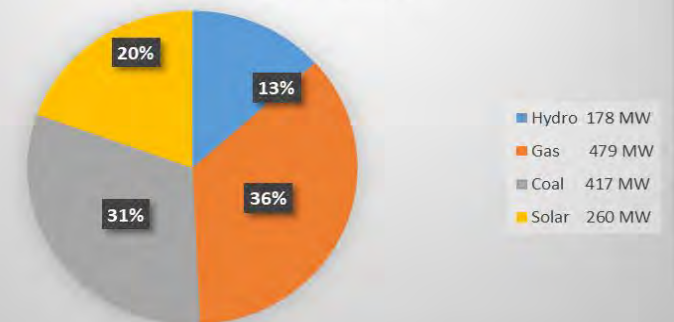


## Resources

Big Rivers' 2020 Resource Mix MW



Big Rivers' 2024 Proposed Resource Mix MW



## CONTACT INFO



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