

How should Platte River Power Authority pursue a noncarbon energy future?

Portfolio option 1	Portfolio option 2	Portfolio option 3	Portfolio option 4
Continuity	No coal-fired generation by 2030	100% noncarbon generation by 2030	Integrated utilities
Platte River will continue its current business practices to add noncarbon energy resources on an economical basis, maintain strong system reliability and retire coal-fired resources when advantageous to the owner communities.	Platte River will retire all coal-fired generation early, add more noncarbon generation than with Option 1 and use natural gas-fired generation as needed to maintain electrical system reliability. Should technology advance more rapidly, greater carbon reduction would be possible.	Platte River will retire all fossil fuel generation and replace it with significant amounts of noncarbon resources and battery storage. Even with significant additions and market purchases, Platte River could not guarantee electrical system reliability due to the intermittent nature of noncarbon sources.	Rapid technology advances are assumed, which will foster a more seamless integration between the transmission and distribution systems, leading to significant growth in electric vehicles and rooftop solar, while maintaining electric system reliability. Rawhide Unit 1 would economically retire by 2035 due to lower cost noncarbon resources.
Results/impact			
<ul style="list-style-type: none"> 2030 noncarbon energy delivered: 60+% 2035 noncarbon energy delivered: 65% Annual wholesale rate increase: 2.2% (2021-2030) – cumulative increase of 24.3% Annual inflation rate (assumed): 2% System reliability: 99.99% 	<ul style="list-style-type: none"> 2030 noncarbon energy delivered: 90+% 2035 noncarbon energy delivered: 95% Annual wholesale rate increase: 2.6% (2021-2030) – cumulative increase of 29.3% Annual inflation rate (assumed): 2% System reliability: 99.99% 	<ul style="list-style-type: none"> 2030 noncarbon energy delivered: 100% 2035 noncarbon energy delivered: 100% Annual wholesale rate increase: 8.7% (2021-2030) – cumulative increase of 130.3% Annual inflation rate (assumed): 2% System reliability: Unknown 	<ul style="list-style-type: none"> 2030 noncarbon energy delivered: 65+% 2036 noncarbon energy delivered: 90% Annual wholesale rate increase: 2.8% (2021-2030) – cumulative increase of 31.8% Annual inflation rate (assumed): 2% System reliability: 99.99%
What would be done			
<ul style="list-style-type: none"> Add noncarbon resources and storage Growth of roof-top solar expected Use existing coal and gas plants past 2030 Adjust strategy based on industry/technology improvements Craig units 1 and 2 retired in 2025 and 2028, respectively Retire Rawhide Unit 1 after 2040 	<ul style="list-style-type: none"> Add more noncarbon resources and storage Growth of roof-top solar expected Use new and existing gas-fired generation past 2030 for electric reliability Craig units 1 and 2 retired in 2025 and 2028, respectively Rawhide Unit 1 retired by 2030 	<ul style="list-style-type: none"> Add many more noncarbon resources and energy storage than energy demand (to cover intermittency of solar and wind resources) Growth of roof-top solar expected Significant investment needed to reduce reliability risk Greater market dependence needed for reliability Retire all coal and gas generation by 2030 	<ul style="list-style-type: none"> Assumes rapid technology development Economically add renewables and storage Much higher roof-top solar, EV adoption More system integration and distribution system investment Craig units 1 and 2 retired in 2025 and 2028, respectively Retire Rawhide Unit 1 by 2035 due to lower cost noncarbon resources
Key supporting arguments			
<ul style="list-style-type: none"> 99.99% system reliability maintained Sales from Rawhide Unit 1 could displace older, dirtier coal plants in the region Wholesale electric rates would rise at a rate very close to assumed inflation rate 	<ul style="list-style-type: none"> 99.99% system reliability maintained 90-95% carbon reduction, placing Platte River among the leading noncarbon utilities in the nation Wholesale electric rates should remain competitive 	<ul style="list-style-type: none"> 100% noncarbon goal reached by 2030 Places Platte River among the leading noncarbon utilities in the nation 	<ul style="list-style-type: none"> 99.99% system reliability maintained Sales from Rawhide Unit 1 could displace older, dirtier coal plants in the region Wholesale electric rates should remain competitive 90% noncarbon energy delivered by 2036, more aggressive than most U.S. utilities
Concerns/tradeoffs			
<ul style="list-style-type: none"> Will not achieve 100% noncarbon objective by 2030 Coal-fired generation not retired 	<ul style="list-style-type: none"> Will not achieve 100% noncarbon objective by 2030 Additional gas generation added to maintain system reliability 	<ul style="list-style-type: none"> Wholesale rates could rise 8+% annually starting in 2021 System reliability cannot be guaranteed even with significant investments Higher market reliance = higher risk Much more renewable capacity and battery storage needed 	<ul style="list-style-type: none"> Will not achieve 100% noncarbon mix by 2030 Wholesale rates may rise slightly more than options 1 or 2 Coal not retired until the end of 2035 Technology may not advance as rapidly as expected