

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF BIG RIVERS)	
ELECTRIC CORPORATION FOR A)	
CERTIFICATE OF PUBLIC CONVENIENCE)	
AND NECESSITY AUTHORIZING THE)	CASE NO.
CONVERSION OF THE GREEN STATION)	2021-00079
UNITS TO NATURAL GAS-FIRED UNITS AND)	
AN ORDER APPROVING THE)	
ESTABLISHMENT OF A REGULATORY ASSET)	

ORDER

On March 1, 2021, Big Rivers Electric Corporation (BREC), pursuant to KRS 278.020 and 807 KAR 5:001, filed an application requesting (1) a Certificate of Public Convenience and Necessity (CPCN) to convert two coal-fired generating units at the Robert D. Green generating station (Green Station) to natural gas-fired generating units; (2) approval to depreciate the gas conversion assets over seven years; and (3) authorization to establish a regulatory asset to defer recognition of retirement costs for certain assets of Green Station. BREC requested a decision no later than June 29, 2021, so that BREC could meet deadlines to cease coal-fired generation and commence gas-fired generation.¹

The Attorney General of the Commonwealth of Kentucky, by and through the Office of Rate Intervention (Attorney General) and Kentucky Industrial Utility Customers, Inc. (KIUC) are intervenors in this proceeding. BREC responded to three rounds of

¹ See Application at 38. BREC reported that the deadline to cease coal-fired generation at Green Station is June 2022 and that the natural gas-fired units must be commercial by April 30, 2022. BREC stated that, due to timing of outages, it had to begin pre-outage construction by November 1, 2021.

discovery. BREC, the Attorney General, and KIUC filed a joint motion on May 10, 2021, requesting to submit this matter for a decision based on the written record. On May 13, 2021, the Commission entered an Order granting the parties' joint motion and canceling the hearing that was scheduled for May 25–26, 2021. This matter now stands submitted for a decision.

PROPOSED PROJECT

BREC owns generating assets and purchases, transmits, and sells wholesale electric power, primarily to BREC's three distribution cooperative members, who in turn provide retail electric service to approximately 118,000 members in 22 counties in western Kentucky.² In addition to the Green Station, BREC operates the Robert A. Reid (Reid Station) and D.B. Wilson Plant (Wilson Station) generating units, with total capacity of 1,114 MW.³ With additional capacity from three solar purchase power agreements (PPA) with solar facilities that will be operational by 2024, BREC's total generation resources will be 1,374 MW.⁴ In a previous proceeding, the Commission approved the closing of the Green Station ash pond by October 31, 2029, because it did not satisfy federal Coal Combustion Residuals (CCR) Rule requirements.⁵ However, due to revisions to the CCR Rule in 2020,⁶ the timeline for closing the ash pond was accelerated.

² Application at 2.

³ *Id.* at 3.

⁴ *Id.*

⁵ Case No. 2019-00435, *Electronic Application of Big Rivers Electric Corporation for Approval of Its 2020 Environmental Compliance Plan, Authority to Recover Costs Through a Revised Environmental Surcharge and Tariff, the Issuance of a Certificate of Public Convenience and Necessity for Certain Projects, and Appropriate Accounting and Other Relief* (Ky. PSC Aug. 7, 2020).

⁶ 40 CFR § 257.103(f)(2).

With the closure of the ash pond, BREC must stop burning coal at Green Station or upgrade an existing landfill to accept all CCR material produced by burning coal at Green Station. If Green Station is idled or retired, BREC projects a capacity deficit through 2029.

BREC requested a CPCN to convert two coal-fired generating units at Green Station to natural gas units. BREC proposed to retrofit coal burners with gas burners, modify the burner management system, and install gas metering and regulating facilities. The estimated capital cost of the proposed conversion is \$45.3 million, which includes \$18.5 million for the gas burner design and supply, \$19.8 million for the gas burner construction, and \$7.0 million for the installation of the gas pipeline infrastructure that will be constructed by Texas Gas Transmission, LLC.⁷ The estimated annual operating and maintenance cost is \$8.9 million, which includes \$6.0 million for labor, \$2.6 million in non-labor routing maintenance, and \$0.3 million in capital routine maintenance, excluding fuel and other variable costs.⁸

BREC's timeline includes awarding a construction contract by July 1, 2021; beginning pre-outage construction by November 1, 2021; and finalizing environmental permits by December 31, 2021.⁹ Green Unit 1 is projected to be commercial by March 11, 2022, and Green Unit 2 is projected to be commercial by April 30, 2022.¹⁰

BREC proposed to finance the project with general cash reserves, but is also exploring financing with a loan from the U.S. Department of Agriculture Rural Utilities

⁷ Direct Testimony of Michael T. Pullen (Pullen Testimony), at 18, lines 7–11; BREC's Response to Commission Staff's Third Request for Information (Staff's Third Request) (filed May 10, 2021), Item 3.

⁸ Pullen Testimony at 18, lines 12–17; Direct Testimony of Paul G. Smith (Smith Testimony), at 7, lines 1–6.

⁹ Pullen Testimony at 19, lines 9–17.

¹⁰ *Id.* at 19, line 18 through 20, line 1.

Service (RUS). BREC explained that RUS offers attractive financing terms, including incrementally lower interests rates, but if an RUS loan is not available, BREC may explore obtaining financing from other lenders, including the National Rural Utilities Cooperative Finance Corporation (CFC). BREC stated that, if it pursues a loan to finance the proposed conversion, it will request prior Commission approval in accordance with KRS 278.300.

ISSUES

CPCN

BREC maintained that the proposed conversion was needed to comply with environmental regulations and satisfy a capacity shortfall. The revisions to the CCR Rule, which were published in the Federal Register on August 28, 2020, established a new deadline of October 31, 2023, to close certain ash ponds, including the ash pond at Green Station. BREC explained that the CCR Rule does not establish a deadline to stop placing CCR material in the ash pond. However, by backing out dates for events that must occur in order to meet the October 31, 2023 closure date, BREC determined that it must stop receiving CCR material, and thus cease burning coal, by June 1, 2022.

Regarding the capacity shortfall, BREC asserted that, even with the solar PPAs coming online in 2024, BREC will not have sufficient capacity if the Green Station was idled or retired due to increased demand. BREC projected that native load peak demand will increase from 627 MW in 2020 to 832 MW in 2022 with the addition of the Nucor Steel Brandenburg (Nucor) load, and then grow to 852 MW in 2039. BREC explained that the projected amounts do not include the required 9 percent planning reserve margin required due to BREC's participation in Midcontinent Independent System Operation, Inc. (MISO). BREC asserted that, with the Green Station conversion to natural gas, it will have

90 percent of the capacity required to serve native load and Owensboro Municipal Utilities (OMU) and Kentucky Municipal Energy Agency (KYMEA) contracts.¹¹ BREC further asserted that, with the conversion of Green Station, BREC is projected to have 1,374 MW of capacity by 2024 to serve native load and the OMU and KYMEA contracts. This capacity is derived from 260 MW from three solar PPAs and 1,114 MW from existing coal-fired and natural gas generating units, which includes 414 MW from a converted Green Station. BREC contended that converting the Green Station to natural gas would not result in wasteful duplication of resources because the conversion is necessary to satisfy a capacity shortfall.

BREC asserted that the proposed conversion is the lowest cost alternative with the lowest risk to meet BREC's capacity obligations. In its analysis of alternatives, BREC ran a short-term PLEXOS model for 2023 through 2029. BREC evaluated four options: (1) idling Green Station and purchasing from MISO; (2) retain Green Station coal-fired generation with upgrades necessary to comply with the CCR Rule; (3) convert Green Station to natural gas with non-firm gas supply as a capacity hedge until counterparties are secured for a proposed natural gas combined cycle (NGCC) partnership;¹² and (4) Green Station conversion with firm gas supply as a capacity hedge until counterparties are secured for the NGCC partnership. BREC accounted for the differences in resource

¹¹ BREC omitted its Nebraska contracts in the capacity obligations because BREC purchases capacity to serve those contracts from another source and the contracts are not part of BREC's MISO capacity position. See Direct Testimony of Mark Eacret (Eacret Testimony) at 7, lines 5–8.

¹² In its 2020 IRP, BREC included 90 MW from a partnership in a new 592 MW NGCC unit coming online in 2024 as a least cost option. BREC has not been able to find counterparties for a partnership. BREC explained that, if counterparties were found to form a partnership, it would take 36 months from the date an order was placed for the NGCC unit to go online. See BREC's Response to Staff's First Request, Item 2; and BREC's Response to Staff's Second Request (Staff's Second Request) (filed Apr. 16, 2021), Item 1.

capacity for each of the scenarios, with the firm capacity values for each scenario used to calculate capacity revenue and associated energy revenue. To determine bilateral market prices for capacity price projects used in the modeling, BREC solicited over 20 market participants for long-term capacity proposals. BREC received no offers from 11 market participants, four offers for 2022 only, and five offers for five to ten years. Based on the offer price, MISO zone, and counterparties' credit rates, BREC developed capacity projections.¹³

From the four options, BREC identified the two least cost options: (1) Green Station conversion with non-firm gas supply; and (2) purchases from MISO. From these two options, BREC determined that converting Green Station with non-firm gas supply was the most economical option due to the price risk and risk of volatility of relying on MISO Planning Resource Auction (PRA) for capacity needs. First, under the PRA, BREC could only purchase capacity for the following planning year, which is contrary to BREC's need for multi-year capacity purchase as a longer-term hedging alternative. Second, the PRA represented a price risk because price is unknown until the spring auction and price volatility because recent prices increased from \$2,660,850 to purchase 300 MW of capacity in PRA 2019 to \$28,199,535 to purchase 300 MW capacity in 2020. Third, BREC stated that the retirement of a large number of baseload units in MISO Zone 6 puts pressure on supply and demand. Fourth, BREC pointed to the Commission's Order in Administrative Case 387,¹⁴ which found that jurisdictional utilities should secure sufficient

¹³ BREC explained that the MISO capacity market price projections submitted in this case differ from the projections contained in BREC's 2020 IRP due to updated forecasts.

¹⁴ Administrative Case No. 387, *A Review of the Adequacy of Kentucky's Generation Capacity and Transmission System* (Ky. PSC Dec. 20, 2001).

power to serve native load through direct ownership of generation or firm power purchases at fixed costs, or a combination of both, to guarantee performance and reasonable price stability.

As additional support for its assertion that converting Green Station is the most reasonable least cost option, BREC maintained that if a natural gas combined NGCC partnership is pursued in the future, then the infrastructure and metering from the Green Station could be repurposed for the NGCC unit. Additionally, because the converted Green Station has a projected service life beyond 2029, if the NGCC unit is not constructed, Green Station could provide BREC with flexibility to meet long-term needs as an economical capacity resource beyond 2029. Finally, BREC asserted that if Green Station is converted to natural gas, then BREC will not require base load or peaking capacity additions to meet native load for the next ten years.

BREC asserted that the project cost does not involve sufficient initial capital outlay relative to the alternative of market purchases to materially affect existing financial condition, and will not result in rate increase to BREC or Members retail base rates. As discussed above, BREC intends to finance the project from its general funds, while reserving the possibility that it may obtain a loan from RUS or CFC. BREC averred that the economics of the proposed conversion are similar to the economics of retiring the Green Station, which was expected to occur by 2029, and thus the conversion will not have a material impact on BREC's New TIER Credit.¹⁵

¹⁵ See Case No. 2020-00064, *Electronic Application of Big Rivers Electric Corporation for Approval to Modify Its MRSM Tariff, Cease Deferring Depreciation Expenses, Establish Regulatory Assets, Amortize Regulatory Assets, and Other Appropriate Relief*, (Ky. PSC June 25, 2020) (net margins above the margins that would result in a TIER of 1.30 are allocated between a bill credit to customers and accelerating the amortization of a certain regulatory asset).

Depreciation

BREC evaluated the economics of the proposed conversion over seven years. For this reason, BREC requested that it be authorized to depreciate the conversion costs over a seven-year period rather than the useful life, which could be through 2043. BREC asserted that a seven-year depreciation period would ensure no unrecovered net book value at end of targeted period for operating the converted Green Station. If the depreciation period is longer than seven years, then BREC would have a potential unrecovered net book value when the converted Green Station was retired after 2029.

Regulatory Asset

BREC requested to defer recognition of the cost from retiring Greet Station assets that would no longer be in use after the conversion, which have a remaining net book value of approximately \$67.3 million as of March 31, 2022, which is also the estimated retirement date for the coal-related assets. BREC proposed a levelized amortization schedule of \$3 million per year from 2022 to 2043, which represents the remaining years in BREC's members' all-requirements contract. BREC further proposed that the Commission review the reasonableness of the retirement costs in the annual review of the Member Rate Stability Mechanism (MRSM) tariff.

BREC intends to sell marketable assets or to recover scrap value for certain materials and expects this to significantly offset the decommissioning costs. RUS approved BREC to establish a regulatory asset for the Green Station assets conditioned on Commission approval.

DISCUSSION AND FINDINGS

CPCN

The Commission's standard of review of a request for a CPCN is well settled. No utility may construct or acquire any facility to be used in providing utility service to the public until it has obtained a CPCN from this Commission.¹⁶ To obtain a CPCN, a utility must demonstrate a need for such facilities and an absence of wasteful duplication.¹⁷

"Need" requires:

[A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated.

[T]he inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.¹⁸

"Wasteful duplication" is defined as "an excess of capacity over need" and "an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties."¹⁹ To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed.²⁰ The fundamental principle of reasonable least-cost alternative is embedded in such an analysis. Selection

¹⁶ KRS 278.020(1).

¹⁷ *Kentucky Utilities Co. v. Pub. Serv. Comm'n.*, 252 S.W.2d 885 (Ky. 1952).

¹⁸ *Id.* at 890.

¹⁹ *Id.*

²⁰ Case No. 2005-00142, *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky* (Ky. PSC Sept. 8, 2005).

of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.²¹ All relevant factors must be balanced.²²

Based upon the case record and being otherwise sufficiently advised, the Commission finds, for the reasons discussed below, that BREC presented sufficient evidence to support a determination that there is a need to convert Green Station to a natural gas-fired unit, that the proposed project will not create wasteful duplication of facilities. Therefore, BREC's request for a CPCN to convert Green Station from a coal-fired unit to a natural gas-fired unit should be granted.

The Commission finds that the Green Station conversion is needed to comply with environmental regulations while providing adequate service to its customers and Owner-Members. The Commission concurs with BREC's reading of the CCR Rule regarding the ash pond closure deadline as it applies to the size and type of facility at Green Station, and that BREC must close the ash pond by October 2023. The Commission finds BREC's calculation of June 1, 2022, as the date to stop receiving CCR material is reasonable given the nature and amount of steps that must be taken to close the ash pond. The Commission further finds that BREC provided sufficient evidence of a pending capacity shortfall to serve native load, and the OMU and KYMEA contracts, if Green Station were idled or retired in 2022.

²¹ See *Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 390 S.W.2d 168, 175 (Ky. 1965). See also Case No. 2005-00089, *Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of a 138 kV Electric Transmission Line in Rowan County, Kentucky* (Ky. PSC Aug. 19, 2005).

²² Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005), final Order at 6.

We note that in its 2020 IRP,²³ BREC rejected converting Green Station as uneconomical. However, the Commission concludes that differences in the analysis in the 2020 IRP and this matter reasonably result from different key assumptions between the two cases. For example, in the 2020 IRP, BREC analyzed a converted Green Station as a long-term resource designed to meet member load and the capacity reserve margin between 2024 and 2043, but was rejected as uneconomic because it would have provided capacity significantly above member load and capacity reserve margin. In this proceeding, the Green Station conversion was analyzed as a short-term resource designed to operate between 2022 and 2029 as a capacity hedge to meet native load and the OMU and KYMEA contracts while complying with environmental regulations.

The Commission finds that BREC provided sufficient evidence that it thoroughly reviewed the reasonable alternatives. For example, BREC appropriately took into account the differences in resource capacity between the alternatives, and fully considered the costs, including the cost of the gas infrastructure construction and costs for purchasing gas for the converted Green Station. BREC modeled its market capacity forward prices based on actual offers from market participants. BREC evaluated multiple options, narrowing the reasonable alternatives to two options.

The estimated cost of the conversion project and the projected MISO capacity purchases are virtually indistinguishable. The difference in the available short-term options is the price and volatility risk associated with a large portion of BREC's capacity requirements being satisfied with market purchases. Given the comparative risk reduction and ancillary benefits of the conversion project, the Commission concurs with

²³ Case No. 2020-00299, *Electronic 2020 Integrated Resource Plan of Big Rivers Electric Corporation* (filed Sept. 21, 2020).

BREC's selection of the conversion project. While the NGCC partnership would be the least cost option overall, BREC's inability to find partners and the long lead time relative to the Green Station closure necessitates a short-term solution.

Thus, for the above reasons, the Commission finds that BREC satisfied the requirements of KRS 278.020, and therefore its request for a CPCN to convert Green Station to a natural gas-fired facility should be granted.

Depreciation

The Commission is persuaded that BREC should use a seven-year depreciation period for the converted Green Station. The seven-year period mirrors the expected period that Green Station will operate as a natural gas-fired facility. BREC's economic analysis used this period. Further, approving the seven-year depreciation period would mitigate the need for another regulatory asset to be recovered through the MRSM. Minimizing the risk of additional expenses ultimately being recovered through the MRSM presents a material financial benefit to BREC and its member-owners. For these reasons, the Commission finds that it is reasonable to depreciate the converted Green Station over seven years, and therefore BREC's request should be granted.

Regulatory Asset

The Commission finds that BREC provided sufficient evidence and that its request for deferral accounting for the coal-related assets that will be retired in conjunction with the conversion of Green Station should be approved. BREC stated that including this regulatory asset in the MRSM will not impact the regulatory liability balance necessary to ensure proper margins to maintain credit metrics. BREC expects the regulatory asset to be substantially offset by the sale or salvage of the decommissioned assets. The

Commission is persuaded that allowing BREC to use deferral accounting for the coal-related assets will mitigate the effects of the Green Station conversion on BREC's margins and is appropriate in this instance for the remaining retired generator assets.

IT IS THEREFORE ORDERED that:

1. BREC is granted a CPCN to convert Green Station to a natural-gas facility as set forth in its application.

2. BREC shall notify the Commission prior to performing any additional construction not expressly authorized by this Order.

3. Any deviation from the construction approved by this Order shall be undertaken only with prior approval of the Commission.

4. BREC shall file with the Commission documentation of the total costs of this project, including the cost of construction and all other capitalized costs within 60 days of the date that construction authorized under this CPCN is substantially completed. Construction costs shall be classified into appropriate plant accounts in accordance with the Uniform System of Accounts for water utilities prescribed by the Commission.

5. BREC shall file a copy of the "as-built" drawings and a certified statement that the construction has been satisfactorily completed in accordance with the contract plans and specifications within 60 days of the substantial completion of the construction certificated by this Order.

6. Any documents filed in the future pursuant to ordering paragraphs 2, 4, and 5 shall reference this case number and shall be retained in the post-case correspondence file.

7. The Executive Director is delegated authority to grant reasonable extensions of time for filing any documents required by this Order upon BREC's showing of good cause for such extension.

8. BREC shall use a seven-year depreciation period for the coal-related assets that are retired as set forth in its application.

9. BREC is authorized to establish regulatory assets for the actual remaining net book value and decommissioning costs of the coal-related assets as set forth in its application, subject to Commission review of any decommissioning costs.

10. The regulatory asset accounts established in this case are for accounting purposes only.

11. This case is closed and removed from the Commission's docket.

By the Commission



ATTEST:



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