

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE ENERGY	)	
KENTUCKY, INC. FOR A CERTIFICATE OF	)	
PUBLIC CONVENIENCE AND NECESSITY TO	)	CASE NO.
CONSTRUCT A 138-KV TRANSMISSION LINE	)	2023-00239
AND ASSOCIATED FACILITIES IN BOONE	)	
COUNTY (HEBRON TO OAKBROOK	)	
TRANSMISSION LINE PROJECT)	)	

ORDER

On September 13, 2023, Duke Energy Kentucky, Inc. (Duke Kentucky) filed an application, pursuant to KRS 278.020(2) and 807 KAR 5:001, Section 15, for a Certificate of Public Convenience and Necessity (CPCN) authorizing the construction of approximately 2.1 miles of 138-kilovolt (kV) transmission line and the rebuild of approximately 1.5 miles of existing 69 kV transmission line to upgrade to 138 kV transmission line in Boone County, Kentucky.

By Order issued October 2, 2023, the Commission established a procedural schedule for the orderly processing of this matter and extended the deadline for issuing a decision to 120 days, pursuant to KRS 278.020(9), up to and including January 11, 2024. One intervenor was permitted to intervene.<sup>1</sup> Duke Kentucky responded to three

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<sup>1</sup> George Casteel, an individual owning real property adjacent to Duke Kentucky's line rebuild right-of-way (ROW), was permitted to intervene by Order dated October 16, 2023. Mr. Casteel did not submit requests for information to Duke Kentucky. However, he did send an email to the Commission (filed into the record on Dec. 4, 2023) requesting information on the location of the transmission line. This information was available in Duke Kentucky's application. As proposed, the transmission line will not cross Mr. Casteel's property. The proposed rebuild section centerline of the existing 69 kV transmission line runs southeast from the Limaburg Substation toward the Oakbrook substation along Route 3168, on the opposite side of the road from Mr. Casteel's property. The proposed rebuild section centerline has a 100-foot ROW. Mr. Casteel's property, labelled as parcel 69 in the Application, Exhibit 12 at 20, borders this ROW.

requests for information from Commission Staff. No party requested a hearing prior to the hearing request deadline, and on November 30, 2023, Duke Kentucky requested that the matter be submitted for a decision based upon the existing evidentiary record.

### LEGAL STANDARD

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.<sup>2</sup> To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.<sup>3</sup>

“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.<sup>4</sup>

“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.”<sup>5</sup> To demonstrate that a proposed facility does not

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Although Mr. Casteel’s property is highlighted as a parcel within 100 feet of the rebuild centerline, the ROW does not encroach Mr. Casteel’s property—instead, the ROW line and the parcel line adjoin.

<sup>2</sup> KRS 278.020(1). Although the statute exempts certain types of projects from the requirement to obtain a CPCN, the exemptions are not applicable.

<sup>3</sup> *Kentucky Utilities Co. v. Pub. Serv. Comm 'n*, 252 S.W.2d 885 (Ky. 1952).

<sup>4</sup> *Kentucky Utilities Co.*, 252 S.W.2d at 890.

<sup>5</sup> *Kentucky Utilities Co.*, 252 S.W.2d at 890.

result in wasteful duplication, the Commission has held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed.<sup>6</sup> The fundamental principle of reasonable, least-cost alternative is embedded in such an analysis. Although cost is a factor, selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.<sup>7</sup> All relevant factors must be balanced.<sup>8</sup>

### BACKGROUND

Duke Kentucky previously proposed this construction project in its CPCN application in Case No. 2022-00364,<sup>9</sup> and all filings from that case were incorporated into the record in the present case by Order issued December 4, 2023. The prior application was denied without prejudice by Order dated June 16, 2023, due to Duke Kentucky's failure to comply with 807 KAR 5:120, Section 2(2)–(3). The Commission found that Duke Kentucky had not provided notice to all landowners owning property within the proposed

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<sup>6</sup> 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), Order at 11.

<sup>7</sup> 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), final Order.

<sup>8</sup> Case No. 2005-00089, *East Kentucky Power Cooperative, Inc.* (Ky. PSC Aug. 19, 2005), final Order at 6.

<sup>9</sup> Case No. 2022-00364, *Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct a 138-kV Transmission Line and Associated Facilities in Boone County, Kentucky* (filed Apr. 6, 2023).

ROW of the transmission lines.<sup>10</sup> In the present case, Duke Kentucky has complied with 807 KAR 5:120, Section 2(2)–(3).<sup>11</sup>

The proposed project involves creation of a new single circuit 138 kV transmission line, utilizing a portion of an existing 69 kV transmission line circuit and approximately 2.1 linear miles of a proposed new transmission line. To accommodate the new circuit, reconfigurations to the existing circuit are planned to minimize the new infrastructure required to create this new circuit. The three-terminal circuit between the Hebron, Constance, and Limaburg substations will be split so that after the project is complete, it will only connect the Hebron and Constance substations while a portion of the existing tap to Limaburg will be incorporated in the proposed Hebron to Oakbrook circuit. A portion of the circuit between Limaburg and Oakbrook substations will be rebuilt and incorporated into the new Hebron-to-Oakbrook circuit. Another portion of the circuit between the Oakbrook substation and near Interstate 71/75 will be retired, and the remaining portion of the circuit on the east side of the interstate will remain operational as it currently is built.<sup>12</sup>

Duke Kentucky’s application included, as Exhibit 7, a “Hebron to Oakbrook Reliability Project 138 kV Transmission Line Route Selection Study Report” (Route Selection Study) generated by Stantec Consulting Services, Inc. (Stantec), which addressed both need and the route selection process. The need for the proposed new transmission line and existing line upgrade was further addressed in testimony indicating

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<sup>10</sup> Case 2022-00364 (Ky. PSC June 16, 2023), Order at 8.

<sup>11</sup> Application, Exhibits 11–13.

<sup>12</sup> Application, Exhibit 20, Direct Testimony of John K. Hurd (Hurd Direct Testimony) at 3.

that the current transmission system in the area would not be able to support projected load growth by summer 2025.<sup>13</sup> Duke Kentucky also provided a list of known new and planned developments to support its load growth projections.<sup>14</sup> Based on these projections, Duke Kentucky submitted a transmission planning model indicating overloads at the projected loads if no changes were made to the transmission system, and no overloads after adding the proposed transmission line and upgrading the existing line.<sup>15</sup>

The Route Selection Study outlined Duke Kentucky's methodology for selecting the optimal route from different combinations of 27 different line segments capable of connecting the Hebron substation to the transmission line to be rebuilt. Stantec reviewed 43 potential route combinations, which were reduced to 29 after it determined that four segments would conflict with transmission lines proposed to be built by East Kentucky Power Cooperative, Inc. (EKPC).<sup>16</sup> Stantec then evaluated several quantitative and qualitative factors.

Stantec compiled scores for three quantitative factors—Ecological, Land Use, and Engineering—with lower scores being more desirable.<sup>17</sup> These scores were based on numerous weighted criteria and subcriteria.<sup>18</sup> For Ecological, acreage of wetlands or

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<sup>13</sup> Application, Exhibit 19, Direct Testimony of Yanthi W. Boutwell at 8.

<sup>14</sup> Application, Confidential Exhibit 15. The Amazon Air Hub and other new or planned developments adjacent to the Cincinnati/Northern Kentucky International Airport are significant sources of load growth.

<sup>15</sup> Application, Confidential Exhibit 17.

<sup>16</sup> Route Selection Study at 5.

<sup>17</sup> A Cultural category was also included but none of the segments affected any applicable Cultural criteria.

<sup>18</sup> Route Selection Study at 36–37.

forest within the ROW added to the score, as did number of streams and linear feet of floodplain crossed by the centerline.<sup>19</sup> For Land Use, the total number of properties crossed by the ROW increased the score, as well as type of land use in proximity to the ROW, with residential properties weighted greater than commercial, industrial, institutional, or agricultural properties.<sup>20</sup> For Engineering, criteria included route length, highway or rail crossings; slope, angles, span length; and location of other utility infrastructure.<sup>21</sup>

During the process of compiling this data, Stantec determined that three segments could not be utilized because new medical office buildings were going to be constructed in the area of those segments with uncertain plans for additional construction.<sup>22</sup> This reduced the feasible number of routes to ten. The scores for these ten routes were as follows:<sup>23</sup>

<b>Route</b>	<b>Ecological</b>	<b>Land Use</b>	<b>Engineering</b>	<b>Total Score</b>
G	6.7	9.2	8.2	24.1
M	6.7	11.3	15.0	33.0
AN	7.5	14.0	15.4	36.9
AI	0.0	12.5	25.7	38.2
AC	0.4	12.6	26.3	39.3
R	14.2	15.9	11.1	41.2
L	14.2	15.8	11.6	41.6
W	14.7	15.3	12.3	42.3
A	10.5	15.9	17.1	43.5
AH	8.0	17.2	22.2	47.4

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<sup>19</sup> Route Selection Study at 36.

<sup>20</sup> Route Selection Study at 36.

<sup>21</sup> Route Selection Study at 37.

<sup>22</sup> Route Selection Study at 5.

<sup>23</sup> Route Selection Study at 43.

Commission Staff requested that Duke Kentucky provide estimated costs for each evaluated route. Duke Kentucky responded that it had not completed a cost estimate for unchosen routes, stating:

During the route selection study, many of the criteria utilized in the comparative evaluation process represent proxies for financial cost. All of the criteria in the ecology and engineering groups and many of criteria in the land use group listed in Table 2 on pages 36 and 37 in Exhibit 7 are also proxies for cost. For example, more acres of forested land within the proposed ROW represent both additional environmental impacts and also require more vegetation clearing which represents an increase [in] cost to the project. Therefore, given the fact that many of the criteria used in the analysis also are proxies for cost, the routes with a lower overall score in the analysis have a higher likelihood of having a lower overall project cost.<sup>24</sup>

Stantec also assessed qualitative factors, noted below, and selected Route L as the proposed route.<sup>25</sup> The qualitative factors that eliminated segments from alternative routes included crossing over EKPC's existing transmission line with pole heights close to the maximum height allowed by the Federal Aviation Administration (FAA) near the airport. Another qualitative factor was the elimination of a segment that crossed the congested North Bend Road and would impact local businesses. Routes using one segment were favored because they would allow Duke Kentucky to relocate an existing transmission line within the Kentucky Transportation Cabinet's (Transportation Cabinet) road ROW and construct the new line without any new structures within that ROW. Other segments were favored to utilize the existing transmission corridor through an industrial

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<sup>24</sup> Duke Kentucky's Response to Commission Staff's First Request for Information, Item 2(a).

<sup>25</sup> Route Selection Study at 5-6.

park and reduce impacts to commercial buildings and existing infrastructure along Worldwide Boulevard.

Commission Staff sought additional information about the elimination of Route G from consideration, as it had the best score in the quantitative analysis. Duke Kentucky responded that despite Route G having the best quantitative score, it was not chosen because:

After incorporating the qualitative considerations of segment 12, 25, and 26, compared to other route alternatives it was determined that those segments had significant technical challenges and limitations that would likely increase the potential costs of the project, increase the potential adverse impacts to surrounding land uses such as businesses, as well as potentially increase the time needed to complete the project if above ground structures or underground utility conflicts could not be avoided.

Route G was eliminated due to the additional qualitative considerations identified during the route selection study. These qualitative reasons included anticipated space constraints by existing infrastructure, additional impacts to nearby businesses, existing retaining walls, conflicts with underground utilities, the need to cross over the proposed EKPC transmission line at Highway 237, required FAA lighting, and crossing the I-275 cloverleaf.<sup>26</sup>

Commission Staff also asked whether crossing the cloverleaf was prohibitive. Duke Kentucky responded that it is not prohibitive, unless the Transportation Cabinet refused to allow use of its ROW.<sup>27</sup> Duke Kentucky did not identify any other reasons that any Route G segments would have been prohibitive in the Route Selection Study or its responses to information requests. Duke Kentucky stated Route G was eliminated for a

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<sup>26</sup> Duke Kentucky's Response to Commission Staff's Third Request for Information (Staff's Third Request), Item 1(a)-(b).

<sup>27</sup> Duke Kentucky's Response to Staff's Third Request, Item 1(c).

combination of the qualitative factors above. The Commission finds Duke Kentucky's filings to be unclear as to whether the potential costs identified in the qualitative analysis were also reflected in the quantitative scores.

The estimated cost of construction for Route L and the upgrade of the existing transmission line was approximately \$35,000,000, with an estimated annual operations and maintenance cost of \$10,000.

### DISCUSSION AND FINDINGS

Duke Kentucky has met its burden to establish the need for a new and upgraded transmission line in this region. The load growth forecast was based on gathering extensive information regarding new and planned projects in the area. Duke Kentucky's analysis of the different scenarios laid out in Confidential Exhibit 17 adequately demonstrates the risk of overload if the transmission system in this area is not expanded upon. This project is necessary for the future reliability of the transmission system in the described area.

As for lack of wasteful duplication, the methodology behind the Route Selection Study is sound in that it attempts to address (1) quantitative factors that could be used to identify potential least-cost alternatives and (2) qualitative factors that could be used to assess reasonableness. However, in this case, these evaluations do not clearly establish that Route L is the reasonable, least-cost alternative.

Duke Kentucky stated that the quantitative scores are generally proxies for cost, which is reasonable, as ecological factors, like building across forest or wetland, and engineering factors, like route length, highway or rail crossings, slope, angles, span length, and location of other utility infrastructure, would all result in greater cost. If the

quantitative scores are proxies for cost, then Route G is the probable least-cost alternative. But regardless of whether Route G should be eliminated as an unreasonable alternative, Duke Kentucky has not clearly established a cost comparison between all feasible or reasonable alternatives. Although Duke Kentucky stated that quantitative scores are generally proxies for cost, its qualitative analysis also mentions the added costs involved if Route G were selected. Duke Kentucky's filings do not make clear whether these additional costs are included in the quantitative analysis. If not, then the quantitative scores are not proxies for cost. If so, then parts of the qualitative analysis are duplicative, and the remaining qualitative factors would be limited to those discussed below. Either way, without knowing the estimated costs of the alternatives other than the proposed Route L, even generally, the Commission does not have sufficient information to compare the alternatives to determine the reasonable, least-cost alternative. In a 2023 transmission line case, the Commission denied a CPCN because the utility failed to provide cost information for alternatives, despite providing more cost comparison information than Duke Kentucky has in the present case.<sup>28</sup> Testimony provided by Duke Kentucky in its Application indicates that the preferred route was chosen based primarily on route impact, with minimal emphasis, if any, placed on cost.<sup>29</sup> Although the Commission may be able to infer cost comparisons under limited circumstances, utilities are required to provide estimated cost of all reasonable alternative proposals considered

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<sup>28</sup> Case No. 2022-00236, *Electronic Application of Kentucky Power Company for a Certificate of Public Convenience and Necessity to Construct 69 kV Transmission Lines and Associated Facilities in Pike County, Kentucky* (Ky. PSC Jan. 5, 2023), Order at 22.

<sup>29</sup> Hurd Direct Testimony at 13.

to ensure the Commission is provided with sufficient information to evaluate all alternatives.

Regarding reasonableness, Duke Kentucky has provided reasons why use of certain line segments might not be reasonable when evaluated cumulatively, and in some cases might be prohibitive based on a single factor. The Commission agrees that the uncertainty surrounding building a transmission line concurrently in the same locations as EKPC's proposed transmission line and in the medical building construction area make use of those segments prohibitive and therefore likely unreasonable. The Commission also agrees that multiple factors that would not be prohibitive alone could potentially result in a route alternative being deemed unreasonable. Factors like delay, FAA restrictions, and uncertainty regarding ability to receive approval for using a Transportation Cabinet ROW are qualitative factors that may not be represented in the quantitative analysis that should be considered. However, the Commission finds that Duke Kentucky has not established that all of the nine alternative routes other than Route L were unreasonable. For example, Route R does not include any of the segments that Duke Kentucky finds objectionable for Route G. The only apparent difference between Route L and Route R is the path through the industrial park. Route R uses some of the same segments through the industrial park that Duke Kentucky indicated were favorable and has a slightly better quantitative score than Route L. The Commission cannot find that Route R is unreasonable compared to L, as they are very similar. If Route R is more cost-effective, then it may be the reasonable, least-cost alternative compared to Route L. Duke Kentucky has not provided enough detail about the qualitative factors—specifically what the “technical challenges and limitations” to the all the other routes are, how each route

would affect land uses, and why these factors would not already be accounted for in the quantitative analysis, as they would seem to be factors encompassed by Ecology, Land Use, and Engineering criteria.

The Commission recognizes that it has granted Duke Kentucky transmission line CPCNs in the past based on similar route selection studies without cost estimates.<sup>30</sup> However, in addition to the precedent set in Case No. 2022-00236, the Commission distinguishes the present case as described below.

First, the difference in scores between the selected route and the route with the best score in Case No. 2019-00361, Duke Kentucky's last transmission line CPCN case, was smaller. The selected route had an approximately 25 percent higher score, while in the present case, Route L had an approximately 72 percent higher score than Route G. If the scores are indeed proxies for cost, Route L is approximately 72 percent more expensive. The Commission can more easily infer that 25 percent extra cost is outweighed by qualitative limitations compared to 72 percent extra cost. In the present case, ratepayers could be overpaying for this project by \$15,000,000 plus financing costs. The Commission's jurisdiction over CPCNs exists, in part, to prevent utilities from selecting more expensive ways of meeting needs that boost their return on investment at the expense of ratepayers. The Commission cannot infer that potentially over \$15,000,000 in extra costs is warranted without complete information about cost and qualitative limitations.

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<sup>30</sup> See Case No. 2019-00361, *The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line and Associated Facilities in Boone County (Woodspoint to Aero Transmission Project)* (Ky. PSC Feb. 27, 2020), Order at 15.

In addition, the responses to information requests in the present case raise questions about (1) whether the quantitative scores are actually proxies for cost; (2) whether certain factors considered in the qualitative analysis are duplicative of criteria evaluated in the quantitative analysis; and (3) whether certain qualitative factors are prohibitive of selecting certain routes or are merely factors—none of which were issues in Duke Kentucky’s prior transmission line case.

Having considered the application and all evidence in the record, the Commission finds that Duke Kentucky’s CPCN application should be denied without prejudice for the reasons set out above.<sup>31</sup> Based on the quantitative scores and their relation to possible cost, the Commission does not have sufficient information to find that Duke Kentucky’s proposal does not result in an excessive investment in relation to productivity or efficiency when evaluated alongside qualitative factors. The Commission urges Duke Kentucky to quickly take action to rectify the shortcomings of its application as identified above in a new CPCN application.

IT IS THEREFORE ORDERED that:

1. Duke Kentucky’s application for a CPCN for the proposed construction project is denied without prejudice.
2. This case is closed and removed from the Commission’s docket.

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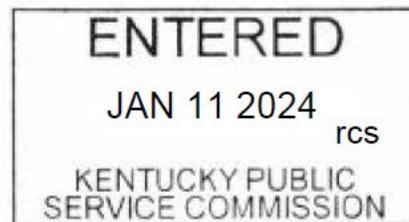
<sup>31</sup> The Commission notes that lack of wasteful duplication has been established for the rebuild portion of the proposed project. The application is unclear as to whether the rebuild as planned is necessary without approval of the new transmission line.

PUBLIC SERVICE COMMISSION

  
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Commissioner



ATTEST:

  
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