

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**



Perry County, Kentucky

Bluegrass Station – Hazard Circuit

Photo Taken September 2020, illustrating a long span attached to a 40-foot pole and a 60 to 70 foot right-of-way at top of hill. The photo also illustrates the typical relationship between tree heights of trees outside rights-of-way in comparison of pole height in Eastern Kentucky.

**September 30, 2020**

## Kentucky Power Company 2021 Vegetation Management Plan (Five-Year Cycle)

### Overview

Kentucky Power began its five-year distribution vegetation management cycle January 1, 2019, in accordance with the Commission's Order in Case No. 2017-00179. For 2020, planned operations and maintenance ("O&M") expenditures for targeted distribution vegetation management are \$21.473 million. For 2021 and 2022, planned O&M expenditures are \$21.733 million and \$21.578 million, respectively. The three-year average annual O&M expenditures for the period 2020-2022 is \$21,594,611. The amount of O&M embedded in base rates for vegetation management expenditures is \$21,465,163 as provided by the Commission's Order in Case No. 2017-00179.

### 2020 Vegetation Management Activities through August 31, 2020

The Company's 2020 distribution vegetation management O&M expenditures through August 31 were \$14,358,252, 66.9% of the 2020 budget of \$21,472,777. Through August 31, 2020, the Company completed 1,103.2 miles, 67.2% of the 2020 distribution vegetation management work schedule of 1,642.0 miles.

Table 1 compares by district the expenditures through August 31, 2020 to the targeted year-end expenditures.

| <b>Table 1: 5-Year Cycle 2020 Expenditures by District</b> |  |  |   |
|--|--|--|---|
| <b>District</b>  | <b>Year-End 2020 Targeted Expenditures</b> | <b>Year-to-Date 2020 Actual Expenditures (Jan - Aug)</b> | <b>Year-End 2020 Percent Expenditures</b> |
| <b>Ashland</b>   | \$6,772,133                                | \$3,851,815  | 56.9%                                     |
| <b>Hazard</b>  | \$7,051,450                                | \$4,322,048  | 61.3%                                     |
| <b>Pikeville</b>   | \$7,649,194                                | \$6,184,389  | 80.9%                                     |
| <b>Total</b>   | <b>\$21,472,777</b>                        | <b>\$14,358,252</b>                                      | <b>66.9%</b>                              |

Note: Certain regional support expenditures (e.g., supervisor and administrative costs) are spread, after the fact, to the three districts based on each district's share of total expenditures.

Table 2 compares by district the targeted circuit miles through August 31, 2020 to the targeted 2020 year-end circuit miles.

| <b>Table 2: 5-Year Cycle 2020 Circuit Miles by District</b> |                                     |   |                                       |
|---|-------------------------------------|---|---------------------------------------|
| <b>District</b>   | <b>Year-End 2020 Targeted Miles</b> | <b>Year-to-Date 2020 Actual Mileage (Jan - Aug)</b> | <b>Year-End 2020 Percent Complete</b> |
| <b>Ashland</b>  | 497.0                               | 333.7   | 67.1%                                 |
| <b>Hazard</b>   | 546.0                               | 338.3   | 62.0%                                 |
| <b>Pikeville</b>  | 599.0                               | 431.2   | 72.0%                                 |
| <b>Total</b>  | <b>1,642.0</b>                      | <b>1,103.2</b>                                      | <b>67.2%</b>                          |

Kentucky Power anticipates reaching the 2020 circuit miles and expenditure targets by December 31, 2020. The average years of vegetation growth for the Company's distribution circuits is estimated to be 5.00 years at year-end 2020.

Table 3 compares the actual miles and expenditures through August 31, 2020 to targeted 2020 year-to-date miles and expenditures.

| <b>Table 3: 2020 Year-to-Date Targeted Miles and Expenditures</b> |   |  |  |  |
|---|---|--|--|--|
| <b>District</b>   | <b>Year-to-Date 2020 Targeted Miles (Jan - Aug)</b> | <b>Year-to-Date 2020 Actual Percent Complete (Jan - Aug)</b> | <b>Year-to-Date 2020 Targeted Expenditures (Jan - Aug)</b> | <b>Year-to-Date 2020 Actual Percent Expenditures (Jan - Aug)</b> |
| <b>Ashland</b>  | 314.8   | 106.0%   | \$4,514,755  | 85.3%  |
| <b>Hazard</b>   | 345.8   | 97.8%  | \$4,700,967  | 91.9%  |
| <b>Pikeville</b>  | 379.4   | 113.7%   | \$5,099,463  | 121.3%   |
| <b>Total</b>  | <b>1,039.9</b>                                      | <b>106.1%</b>  | <b>\$14,315,185</b>  | <b>100.3%</b>  |

Note: Targeted miles are not spread equally across the four calendar quarters. Spraying and non-vegetation management distribution activities (e.g., new customer service requests, storm restoration activity, etc.) are more directed to the second and third quarters. The first and fourth quarters, when there are relatively lower amounts of spraying and non-vegetation management work, are allocated 30 percent of the annual mileage target; the second and third quarters each are assigned 20 percent of the annual mileage target.

The number of vegetation-related service interruptions for tree inside rights-of-way decreased by 10.8% from 621 (twelve-month period ended June 30, 2019) to 554 (twelve-month period June 30, 2020). The number of customer minutes interrupted due to trees inside rights-of-way remained essentially flat, increasing from 2,477,959 to 2,499,309 (a 0.8% increase) when comparing the same two twelve-month periods.

Vine-related outages are included in the reported total inside rights-of-way outages. For the 12-months ending June 30, 2020, vine-related outages constituted 9.4% of inside the rights-of-way customer minutes interrupted and approximately 51.4% of inside the rights-of-way interruptions.

**2021 Vegetation Management Plan – 5-Year Cycle Overview**

1. Targeted Mileage and Expenditures

Table 4 below provides the projected distribution vegetation management mileage for the remaining three years of the first five-year cycle (calendar years 2021-2023). Table 5 below provides the projected annual O&M expenditures to achieve the targeted miles.

| <b>Table 4: 5-Year Cycle Miles of Reclear</b> |              |              |              |
|---|--------------|--------------|--------------|
| <b>5 Year Cycle</b>                           | <b>2021</b>  | <b>2022</b>  | <b>2023</b>  |
| <b>Year 3</b>                                 | <b>1,643</b> |              |              |
| <b>Year 4</b>                                 |              | <b>1,642</b> |              |
| <b>Year 5</b>                                 |              |              | <b>1,643</b> |
| <b>Targeted Miles</b>                         | <b>1,643</b> | <b>1,642</b> | <b>1,643</b> |

| <b>Table 5: 5-Year Cycle Funding Requirements</b> |                     |                     |                     |
|---|---------------------|---------------------|---------------------|
| <b>5 Year Cycle</b>                               | <b>2021</b>         | <b>2022</b>         | <b>2023</b>         |
| <b>Year 3</b>                                     | <b>\$21,733,094</b> |                     |                     |
| <b>Year 4</b>                                     |                     | <b>\$21,577,961</b> |                     |
| <b>Year 5</b>                                     |                     |                     | <b>\$21,447,083</b> |
| <b>Targeted Miles</b>                             | <b>\$21,733,094</b> | <b>\$21,577,961</b> | <b>\$21,447,083</b> |

## 2. Average Vegetation Growth

With the establishment of a five-year distribution vegetation management cycle beginning January 1, 2019, the Company reports the average years of system vegetation growth in addition to the projected miles to be maintained and projected expenditures. Table 6 below provides the projected average years of tree growth for each year of the Company's first five-year cycle (2019-2023).

| <b>Table 6: Average Year Tree Growth for Vegetation Management Program</b> |                       |                                |
|--|-----------------------|--------------------------------|
| <b>5-Year Cycle</b>  |                       | <b>Average Years of Growth</b> |
| <b>Year</b>  | <b>Targeted Miles</b> |                                |
| <b>2019</b>  | 1,543                 | 4.88                           |
| <b>2020</b>  | 1,642                 | 5.00                           |
| <b>2021</b>  | 1,643                 | 5.10                           |
| <b>2022</b>  | 1,642                 | 5.05                           |
| <b>2023</b>  | 1,642                 | 5.00                           |
| <b>Average Years Growth for 2019 to 2023 = 5.01</b>                        |                       |                                |

### **2021 Vegetation Management Plan – Operational Developments**

As Kentucky Power progresses through its initial five-year cycle program, and remains on schedule to re-clear its more than 8,000 miles of primary distribution rights-of-way, inside the rights-of-way service interruptions continue to decrease. However, the number of interruptions caused by trees outside the Company's rights-of-way increased in both absolute numbers and as a percentage of vegetation-related outages. Table 7 below provides, for each of the 20 months ended August 31, 2020, Kentucky Power's twelve-month rolling total SAIDI resulting from trees inside the rights-of-way, vines, and trees outside the rights-of-way, as well as total vegetation-related outages.

| <b>Table 7: Reliability for all Vegetation Indices (12-Month Rolling for all Month Ending) - SAIDI Minutes</b> |            |            |            |            |            |            |            |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>2019</b>  | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> | <b>Sep</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| <b>Tree Inside ROW</b>   | 11.90      | 12.72      | 11.79      | 11.85      | 10.57      | 11.71      | 9.47       | 8.50       | 7.05       | 9.65       | 9.48       | 9.41       |
| <b>Vines</b>   | 3.64       | 3.62       | 3.55       | 3.54       | 3.69       | 3.39       | 3.24       | 3.18       | 3.21       | 3.27       | 3.24       | 3.23       |
| <b>Tree Outside ROW</b>  | 235.88     | 244.41     | 236.60     | 251.97     | 267.20     | 278.52     | 268.68     | 263.97     | 234.52     | 236.16     | 252.16     | 250.03     |
| <b>Total SAIDI Veg Min</b>   | 251.42     | 260.75     | 251.94     | 267.36     | 281.46     | 293.62     | 281.39     | 275.65     | 244.78     | 249.08     | 264.88     | 262.67     |
|  |            |            |            |            |            |            |            |            |            |            |            |            |
| <b>2020</b>  | <b>Jan</b> | <b>Feb</b> | <b>Mar</b> | <b>Apr</b> | <b>May</b> | <b>Jun</b> | <b>Jul</b> | <b>Aug</b> |            |            |            |            |
| <b>Tree Inside ROW</b>   | 10.05      | 9.66       | 11.13      | 14.44      | 15.90      | 13.81      | 14.17      | 14.63      |            |            |            |            |
| <b>Vines</b>   | 3.22       | 3.21       | 3.18       | 3.18       | 1.66       | 1.43       | 1.42       | 1.49       |            |            |            |            |
| <b>Tree Outside ROW</b>  | 240.54     | 221.32     | 222.93     | 232.63     | 232.05     | 220.30     | 215.19     | 223.81     |            |            |            |            |
| <b>Total SAIDI Veg Min</b>   | 253.81     | 234.19     | 237.24     | 250.25     | 249.61     | 235.54     | 230.78     | 239.93     |            |            |            |            |

The total SAIDI vegetation minutes (tree inside rights-of-way, vines, and tree outside rights-of-way) have decreased 11.49 minutes for a 12-month rolling total between January 2019 and August 2020. The 12-month rolling average SAIDI minutes related to trees inside the rights-of-way, including vines, increased slightly by approximately 0.58 minutes for the same 20-month time period. Trees inside the rights-of-way outages and vines constituted approximately 16.12 minutes or 6.7% of the Company's total vegetation-related SAIDI minutes at the end of August 2020. The 12-month rolling total SAIDI minutes for outages related to trees outside the rights-of-way decreased over the last 20 months by approximately 12.07 minutes but still represent nearly 93% of the Company's total vegetation-related SAIDI minutes.

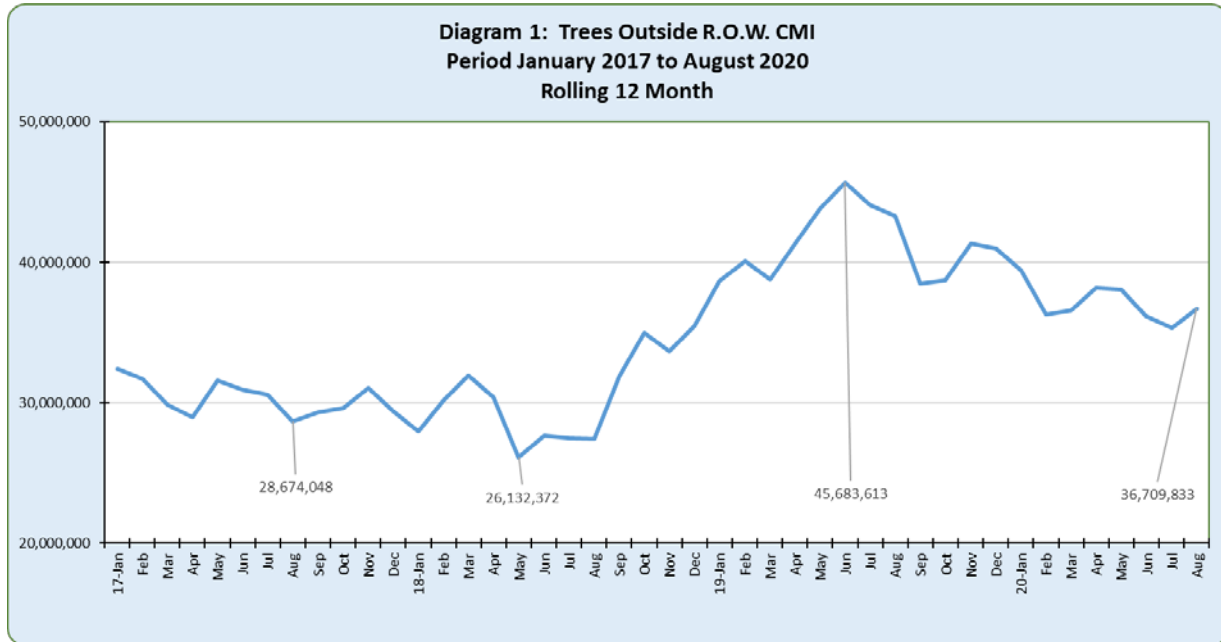
Rainfall between January 2019 and August 2020 was 14.2 inches above the 30-year average ending 2010. See Table 8 below based on National Weather Service records for Jackson, KY.

| Table 8: Recorded Data from National Weather Service for Jackson, KY |             |             |             |             |             |             |             |             |             |      |      |      |             |              |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|------|------|-------------|--------------|
| 30 Yr Normal Precip (1981 - 2010) Jackson, KY Area                   | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep         | Oct  | Nov  | Dec  | Annual Norm |              |
|  | 3.61        | 3.75        | 4.12        | 3.83        | 5.20        | 4.70        | 4.65        | 3.69        | 3.46        | 3.19 | 3.96 | 4.18 | 48.34       |              |
| Monthly Total Inches Precipitation for Jackson, KY Area              | Year        | Jan         | Feb         | Mar         | Apr         | May         | Jun         | Jul         | Aug         | Sep  | Oct  | Nov  | Dec         | Annual Total |
|  | 2001        | 2.50        | 3.72        | 2.17        | 1.69        | 4.39        | 4.19        | 6.43        | 2.41        | 1.09 | 1.41 | 1.82 | 2.55        | 34.37        |
|  | 2002        | 4.09        | 1.24        | 7.96        | 4.11        | 5.23        | 4.98        | 5.50        | 1.72        | 3.48 | 6.39 | 3.61 | 4.28        | 52.59        |
|  | 2003        | 2.10        | 7.88        | 1.47        | 5.14        | 5.98        | 7.54        | 3.95        | 5.12        | 4.33 | 2.20 | 5.49 | 3.78        | 54.98        |
|  | 2004        | 4.23        | 3.77        | 3.87        | 4.01        | 10.78       | 6.18        | 7.02        | 2.39        | 7.55 | 4.96 | 4.37 | 3.27        | 62.40        |
|  | 2005        | 5.12        | 3.03        | 3.52        | 7.47        | 2.50        | 2.78        | 4.08        | 3.92        | 0.51 | 1.57 | 2.66 | 3.18        | 40.34        |
|  | 2006        | 5.57        | 1.85        | 2.89        | 4.57        | 3.61        | 3.24        | 3.87        | 3.69        | 6.39 | 5.49 | 2.43 | 2.03        | 45.63        |
|  | 2007        | 2.83        | 1.20        | 2.71        | 3.22        | 1.82        | 2.15        | 4.05        | 2.64        | 2.49 | 3.80 | 3.37 | 5.18        | 35.46        |
|  | 2008        | 2.46        | 3.41        | 4.14        | 4.00        | 3.24        | 3.94        | 6.13        | 1.16        | 0.67 | 1.46 | 3.03 | 6.86        | 40.50        |
|  | 2009        | 5.80        | 1.73        | 3.52        | 3.64        | 9.22        | 7.03        | 6.40        | 3.55        | 4.88 | 3.54 | 0.80 | 5.96        | 56.07        |
|  | 2010        | 4.27        | 3.11        | 2.43        | 2.61        | 7.92        | 5.60        | 3.34        | 3.51        | 2.05 | 1.68 | 5.77 | 2.97        | 45.26        |
|  | 2011        | 2.72        | 3.97        | 4.74        | 10.20       | 6.69        | 5.49        | 6.02        | 3.07        | 3.20 | 4.25 | 5.48 | 4.18        | 60.01        |
|  | 2012        | 4.86        | 3.90        | 4.07        | 2.67        | 4.20        | 1.91        | 7.39        | 4.75        | 6.77 | 4.24 | 0.84 | 6.39        | 51.99        |
|  | 2013        | 5.73        | 1.91        | 4.63        | 3.70        | 4.23        | 6.36        | 6.62        | 10.04       | 1.27 | 2.13 | 3.01 | 7.09        | 56.72        |
|  | 2014        | 3.15        | 4.47        | 5.51        | 5.43        | 2.30        | 3.12        | 5.77        | 8.55        | 2.35 | 7.77 | 2.97 | 2.49        | 53.88        |
|  | 2015        | 2.12        | 4.06        | 6.26        | 10.29       | 1.74        | 7.42        | 8.87        | 5.02        | 2.09 | 2.40 | 2.41 | 4.64        | 57.32        |
|  | 2016        | 3.29        | 6.27        | 2.38        | 3.82        | 7.04        | 5.01        | 6.35        | 6.83        | 1.32 | 1.51 | 2.91 | 6.16        | 52.89        |
|  | 2017        | 4.71        | 2.86        | 4.42        | 4.02        | 7.41        | 6.21        | 4.13        | 4.56        | 3.33 | 5.29 | 1.30 | 3.28        | 51.52        |
|  | 2018        | 1.92        | 8.00        | 6.97        | 4.12        | 6.18        | 4.63        | 5.06        | 4.43        | 9.17 | 5.12 | 4.91 | 7.47        | 67.98        |
|  | 2019        | 4.26        | 8.87        | 2.40        | 2.80        | 4.90        | 8.01        | 6.97        | 1.25        | T    | 6.01 | 5.80 | 6.30        | 57.57        |
|  | <b>2020</b> | <b>3.37</b> | <b>7.12</b> | <b>9.42</b> | <b>4.69</b> | <b>4.98</b> | <b>5.38</b> | <b>5.45</b> | <b>6.21</b> |      |      |      |             | <b>46.62</b> |
| 20 Yr Mean (through Aug 2020)  | 3.76        | 4.12        | 4.27        | 4.61        | 5.22        | 5.06        | 5.67        | 4.24        | 3.50        | 3.75 | 3.31 | 4.63 | 51.21       |              |
| 3 Yr Mean ('17 - '19)  | 3.63        | 6.58        | 4.60        | 3.65        | 6.16        | 6.28        | 5.39        | 3.41        | 6.25        | 5.47 | 4.00 | 5.68 | 59.02       |              |
| 5 Yr Mean ('15 - '19)  | 3.26        | 6.01        | 4.49        | 5.01        | 5.45        | 6.26        | 6.28        | 4.42        | 3.98        | 4.07 | 3.47 | 5.57 | 57.46       |              |

This above-average rainfall continues to elevate the risk of outside the rights-of-way related outages in two ways. First, heavy rainfalls can impact soil stability to the extent that trees from outside the rights-of-way slide or fall into the distribution structures and lines. Second, periods of above-average rainfall in the Company's service territory enhance threats created by pathogens and/or fungal diseases (Oak Wilt, White Pine Blister Rust, root rot – multiple species), and insects (Emerald Ash Borer, Hemlock Woolly Adelgid, various bark beetles). Pathogens and insects are a contributing factor of outages due to diseased and dead trees falling from outside the Company's rights-of-way. The Company conservatively estimates approximately 5.1 million trees outside the Company's rights-of-way threaten Kentucky Power's distribution structures and lines from stem counts provided by the United States Forestry Service.

The Company began a targeted approach to address these issues with its rights-of-way widening and outside of rights-of-way dead tree abatement programs in January 2018. Initial widening and abatement efforts were focused on the Hazard District for approximately 18 months, and transitioned to the Pikeville District in August 2019. By the end of July 2020, the

Company completed widening approximately 430 miles of rights-of-way and removed over 61,500 trees from outside its rights-of-way. Diagram 1 illustrates the vegetative threat from outside the rights-of-way (74.8% increase from May 2018 until the peak in June 2019) and the improvements provided by the widening of rights-of-way and dead tree abatement program (19.6% improvement from June 2019 through August 2020). The lag for improvements is attributable to the rolling 12-month view.



**2021 Distribution Vegetation Management Plan – by District**

The 2021 distribution vegetation management plan expenditures by district are shown below in Table 9.

| Table 9: 2021 Kentucky Power Distribution Vegetation Management Plan for 5-Year Cycle |                            |                                  |                       |                                   |                         |                     |   |  |
|---|----------------------------|----------------------------------|-----------------------|-----------------------------------|-------------------------|---------------------|---|--|
| Area  | Planned Miles 5-Year Cycle | Unscheduled Reactive O&M Funding | Scheduled O&M Funding | Herbicide Spray (Ground & Aerial) | Internal Forestry Staff | Total O&M Funding   | Forestry Capital Associated with 5-Year Cycle | Forestry Capital Associated with Reliability Performance |
| Ashland   | 499.1                      | \$75,000                         | \$5,741,471.50        | \$462,300                         | \$214,062               | \$6,492,834         | \$736,206                                     | \$110,000  |
| Hazard  | 545.2                      | \$165,750                        | \$6,242,729.00        | \$529,300                         | \$214,062               | \$7,151,841         | \$810,931                                     | \$90,000   |
| Pikeville   | 599.1                      | \$118,250                        | \$6,852,607.50        | \$903,500                         | \$214,062               | \$8,088,420         | \$917,130                                     | \$6,300,000  |
| <b>Totals</b>   | <b>1,643.4</b>             | <b>\$359,000</b>                 | <b>\$18,836,808</b>   | <b>\$1,895,100</b>                | <b>\$642,186</b>        | <b>\$21,733,094</b> | <b>\$2,464,266</b>                            | <b>\$6,500,000</b>                                       |

Internal Forestry Staff expenses for 2021, which will be allocated after-the-fact based on the percentage of total distribution vegetation expenditures made in each district, are shown in Table 9 as being evenly divided between the three districts. Unscheduled hot spot maintenance



and herbicide spray expenditures are allocated at the district level but cannot be allocated to individual circuits.

#### 1. Unscheduled/Reactive Funding

The Company will continue to budget \$359,000 in Unscheduled/Reactive funding to address reliability issues that develop during the year. These expenditures also include tree replacement, stump grinding, and removal of vines that return before the next trim cycle. This level of funding represents 1.65% of the total 2021 Vegetation Management O&M budget.

#### 2. Spray Plan

Kentucky Power's service territory includes some of the most heavily forested areas in the Commonwealth. The Company's spray program is a vital component of controlling cost, achieving targeted miles in future cycles, and maintaining reliability. The spray plan includes ground based and aerial application techniques that are dependent on brush conditions. Kentucky Power projects treating 2,780 acres of brush in 2021 at a cost of \$1,895,100. This represents 8.72% of the total Vegetation Management O&M budget.

#### 3. Forestry Capital Plan

The Company projects \$2,464,266 in 2021 forestry capital expenditures associated with its projected distribution vegetation management O&M expenditures. This funding will be utilized to remove trees larger than 18 inches in diameter inside rights-of-way and to widen rights-of-way.

Kentucky Power also proposes to invest \$6.5 million in widening rights-of-way. This \$6.5 million investment is in addition to the \$2.4 million in capital investment directly associated with the 2021 distribution vegetation maintenance work across the three districts. The Company proposes to invest \$6.3 million of the \$6.5 million targeted for additional rights-of-way widening in the Pikeville District. This work also will include the removal of dead trees from outside the rights-of-way, particularly where a large number of customers might be affected by an outage caused by such a tree coming into contact with the Company's facilities.

### **Exhibit Description**

The following exhibits are attached to and incorporated in this report:

**Exhibit 1** – A circuit-level listing of scheduled 2021 work. The accompanying projected O&M and associated forestry capital expenditures for each circuit to be worked as part of the 2021 Distribution Vegetation Management Plan also is provided.

**Exhibit 2** – The 2021 spray plan by district.

**Exhibit 3** – Summary by district and activity type for 2021 O&M expenditures and capital investment.

**Exhibit 4** – Kentucky Power forestry plan terminology/glossary

**Exhibit 1**

| 2021 Kentucky Power Distribution VM Plan 5-Year Cycle |                   |                 |                |                    |                | Costs that are not allocated to a circuit include: Internal labor & fleet costs, unscheduled hotspot maintenance, ground & aerial spray, and aerial saw |                     |                              |                     |   |
|---|-------------------|-----------------|----------------|--------------------|----------------|---|---------------------|------------------------------|---------------------|---|
| District  | Station Name      | Circuit Name    | Circuit Number | Circuit Line Miles | Miles Planned  | Projected O&M Cost per Mile   | O&M Cost            | Capital Assoc. with Clearing | Total Cost          | Comments                                  |
| ASH   | South Neal        | Whites Creek    | 2206403        | 38.8               | 38.8           | \$11,504  | \$446,342           | \$57,233                     | \$503,574           | Full Circuit Reclear                      |
| ASH   | Big Sandy         | Burnaugh North  | 3000202        | 85.1               | 1.0            | \$11,504  | \$11,504            | \$1,475                      | \$12,979            | Finish Full Circuit Reclear, from 2020    |
| ASH   | Big Sandy         | Yatesville      | 3000203        | 62.3               | 62.3           | \$11,504  | \$716,677           | \$91,897                     | \$808,574           | Full Circuit Reclear                      |
| ASH   | Bellefonte        | Westwood        | 3000301        | 23.0               | 23.0           | \$11,504  | \$264,584           | \$33,927                     | \$298,510           | Full Circuit Reclear                      |
| ASH   | Bellefonte        | Fiatwoods       | 3000302        | 3.1                | 3.1            | \$11,504  | \$35,661            | \$4,573                      | \$40,234            | Full Circuit Reclear, deferred from 2020  |
| ASH   | Bellefonte        | Town Center     | 3000304        | 2.7                | 2.7            | \$11,504  | \$31,060            | \$3,983                      | \$35,043            | Full Circuit Reclear, deferred from 2020  |
| ASH   | Grays Branch      | Grays Branch    | 3000701        | 69.0               | 69.0           | \$11,504  | \$793,752           | \$101,780                    | \$895,531           | Full Circuit Reclear                      |
| ASH   | Hitchens          | Denton          | 3001001        | 46.4               | 9.3            | \$11,504  | \$106,984           | \$13,718                     | \$120,702           | Begin Full Circuit Reclear                |
| ASH   | Hitchens          | Grayson         | 3001003        | 48.0               | 48.0           | \$11,504  | \$552,175           | \$70,803                     | \$622,978           | Full Circuit Reclear                      |
| ASH   | Hoods Creek       | Rural           | 3001102        | 47.2               | 15.0           | \$11,504  | \$172,555           | \$22,126                     | \$194,681           | Begin Full Circuit Reclear                |
| ASH   | Howard Collins    | 29th Street     | 3001202        | 13.2               | 13.2           | \$11,504  | \$151,848           | \$19,471                     | \$171,319           | Full Circuit Reclear                      |
| ASH   | Howard Collins    | Summit          | 3001204        | 25.4               | 25.4           | \$11,504  | \$292,193           | \$37,467                     | \$329,659           | Full Circuit Reclear                      |
| ASH   | Busseyville       | Torchlight      | 3007904        | 97.4               | 25.4           | \$11,504  | \$292,193           | \$37,467                     | \$329,659           | Finish Full Circuit Reclear, from 2020    |
| ASH   | Busseyville       | Mattie          | 3007905        | 92.5               | 92.5           | \$11,504  | \$1,064,088         | \$136,444                    | \$1,200,531         | Full Circuit Reclear                      |
| ASH   | 47th Street       | 39th Street     | 3008002        | 12.9               | 6.4            | \$11,504  | \$73,623            | \$9,440                      | \$83,064            | Begin Full Circuit Reclear                |
| ASH   | Wurland           | Route 503       | 3110903        | 46.3               | 46.3           | \$11,504  | \$532,619           | \$68,296                     | \$600,915           | Full Circuit Reclear                      |
| ASH   | Grayson           | Dixie Park      | 3116102        | 33.1               | 2.0            | \$11,504  | \$23,007            | \$2,950                      | \$25,957            | Finish Full Circuit Reclear, from 2020    |
| ASH   | Belhaven          | Argillite       | 3116703        | 27.7               | 15.7           | \$11,504  | \$180,607           | \$23,159                     | \$203,766           | Finish Full Circuit Reclear, from 2020    |
| <b>Ashland District Totals</b>                        |                   |                 |                |                    | <b>499.1</b>   |   | <b>\$5,741,471</b>  | <b>\$736,206</b>             | <b>\$6,477,677</b>  |   |
|   |                   |                 |                |                    |                |   |                     |                              |                     |   |
| District  | Station Name      | Circuit Name    | Circuit Number | Circuit Line Miles | Miles Planned  | Projected O&M Cost per Mile   | O&M Cost            | Capital Assoc. with Clearing | Total Cost          | Comments                                  |
| HAZ   | Bluegrass         | Walkertown      | 3300601        | 28.7               | 28.7           | \$11,450  | \$328,625           | \$42,688                     | \$371,313           | Full Circuit Reclear                      |
| HAZ   | Combs             | Combs           | 3301401        | 9.6                | 9.6            | \$11,450  | \$109,923           | \$14,279                     | \$124,202           | Full Circuit Reclear                      |
| HAZ   | Combs             | Airport Gardens | 3301402        | 42.1               | 42.1           | \$11,450  | \$482,060           | \$62,620                     | \$544,679           | Full Circuit Reclear                      |
| HAZ   | Leslie            | Hyden           | 3303901        | 89.4               | 34.7           | \$11,450  | \$397,327           | \$51,613                     | \$448,940           | Finish Full Circuit Reclear, from 2020    |
| HAZ   | Jeff              | Boone Ledge     | 3309001        | 5.0                | 5.0            | \$11,450  | \$57,252            | \$7,437                      | \$64,689            | Full Circuit Reclear                      |
| HAZ   | Whitesburg        | Whitesburg      | 3309101        | 8.7                | 8.7            | \$11,450  | \$99,618            | \$12,940                     | \$112,558           | Full Circuit Reclear                      |
| HAZ   | Whitesburg        | Hospital        | 3309102        | 7.1                | 7.1            | \$11,450  | \$81,297            | \$10,561                     | \$91,858            | Full Circuit Reclear                      |
| HAZ   | Whitesburg        | Crafts Colley   | 3309104        | 28.0               | 28.0           | \$11,450  | \$320,610           | \$41,647                     | \$362,257           | Full Circuit Reclear                      |
| HAZ   | Vicco             | Jeff            | 3309302        | 89.0               | 25.0           | \$11,450  | \$286,259           | \$37,185                     | \$323,444           | Full Circuit Reclear                      |
| HAZ   | Slemp             | Defeated Creek  | 3309901        | 13.5               | 13.5           | \$11,450  | \$154,580           | \$20,080                     | \$174,660           | Full Circuit Reclear                      |
| HAZ   | Slemp             | Leatherwood     | 3309902        | 70.8               | 50.0           | \$11,450  | \$572,517           | \$74,370                     | \$646,887           | Begin Full Circuit Reclear                |
| HAZ   | Slemp             | Beech Fork      | 3309903        | 1.7                | 1.4            | \$11,450  | \$16,030            | \$2,082                      | \$18,113            | Finish Full Circuit Reclear, from 2020    |
| HAZ   | Slemp             | Royal Diamond   | 3309904        | 2.3                | 2.3            | \$11,450  | \$26,336            | \$3,421                      | \$29,757            | Full Circuit Reclear                      |
| HAZ   | Haddix            | Troublesome     | 3310503        | 91.4               | 53.8           | \$11,450  | \$616,029           | \$80,022                     | \$696,051           | Begin Full Circuit Reclear                |
| HAZ   | Stinnett          | Redbird         | 3311101        | 117.5              | 57.3           | \$11,450  | \$656,105           | \$85,228                     | \$741,333           | Begin Full Circuit Reclear                |
| HAZ   | Stinnett          | Beech Fork      | 3311102        | 9.6                | 9.6            | \$11,450  | \$109,923           | \$14,279                     | \$124,202           | Full Circuit Reclear                      |
| HAZ   | Reedy             | Dean            | 3311401        | 43.2               | 43.1           | \$11,450  | \$493,510           | \$64,107                     | \$557,617           | Full Circuit Reclear                      |
| HAZ   | Mayking           | Millstone       | 3314402        | 53.5               | 22.5           | \$11,450  | \$257,633           | \$33,467                     | \$291,099           | Finish Full Circuit Reclear, from 2020    |
| HAZ   | Fleming           | Neon            | 3401301        | 20.2               | 20.2           | \$11,450  | \$231,297           | \$30,045                     | \$261,342           | Full Circuit Reclear                      |
| HAZ   | Fleming           | McRoberts       | 3401302        | 28.6               | 28.6           | \$11,450  | \$327,480           | \$42,540                     | \$370,020           | Full Circuit Reclear                      |
| HAZ   | Softshell         | Vest            | 3420001        | 54.0               | 54.0           | \$11,450  | \$618,319           | \$80,320                     | \$698,638           | Full Circuit Reclear                      |
| <b>Hazard District Totals</b>                         |                   |                 |                |                    | <b>545.2</b>   |   | <b>\$6,242,729</b>  | <b>\$810,930</b>             | <b>\$7,053,659</b>  |   |
|   |                   |                 |                |                    |                |   |                     |                              |                     |   |
| District  | Station Name      | Circuit Name    | Circuit Number | Circuit Line Miles | Miles Planned  | Projected O&M Cost per Mile   | O&M Cost            | Capital Assoc. with Clearing | Total Cost          | Comments                                  |
| PKV   | Stanville         | Tram            | 3120102        | 33.0               | 33.0           | \$11,438  | \$377,460           | \$50,518                     | \$427,978           | Full Circuit Reclear                      |
| PKV   | Barrenshe         | Vulcan          | 3200202        | 41.3               | 11.4           | \$11,438  | \$130,395           | \$17,452                     | \$147,847           | Begin Full Circuit Reclear                |
| PKV   | Allen             | Distribution    | 3400101        | 27.2               | 4.8            | \$11,438  | \$54,903            | \$7,348                      | \$62,251            | Finish Full Circuit Reclear, from 2020    |
| PKV   | Elwood            | Dorton          | 3401001        | 43.4               | 43.4           | \$11,438  | \$496,417           | \$66,439                     | \$562,855           | Full Circuit Reclear                      |
| PKV   | Elwood            | Virgie          | 3401002        | 80.4               | 80.4           | \$11,438  | \$919,629           | \$123,080                    | \$1,042,709         | Full Circuit Reclear                      |
| PKV   | Henry Clay        | Ashcamp         | 3401703        | 42.2               | 42.2           | \$11,438  | \$482,691           | \$64,602                     | \$547,292           | Full Circuit Reclear                      |
| PKV   | Index             | West Liberty    | 3401801        | 55.7               | 5.6            | \$11,438  | \$64,054            | \$8,573                      | \$72,626            | Begin Full Circuit Reclear                |
| PKV   | McKinney          | Maytown         | 3402204        | 35.6               | 35.6           | \$11,438  | \$407,199           | \$54,498                     | \$461,697           | Full Circuit Reclear                      |
| PKV   | Middle Creek      | Distribution    | 3402501        | 5.8                | 5.8            | \$11,438  | \$66,341            | \$8,879                      | \$75,220            | Full Circuit Reclear                      |
| PKV   | Pikeville         | Cedar Creek     | 3403003        | 9.9                | 2.0            | \$11,438  | \$22,876            | \$3,062                      | \$25,938            | Finish Full Circuit Reclear, from 2020    |
| PKV   | Prestonsburg      | City            | 3403301        | 6.9                | 6.9            | \$11,438  | \$78,923            | \$10,563                     | \$89,486            | Full Circuit Reclear                      |
| PKV   | Topmost           | Dema            | 3407101        | 36.2               | 36.2           | \$11,438  | \$414,062           | \$55,417                     | \$469,478           | Full Circuit Reclear                      |
| PKV   | Topmost           | Caney           | 3407102        | 3.1                | 3.1            | \$11,438  | \$35,458            | \$4,746                      | \$40,204            | Full Circuit Reclear                      |
| PKV   | Topmost           | Kite            | 3407103        | 25.4               | 25.4           | \$11,438  | \$290,530           | \$38,883                     | \$329,413           | Full Circuit Reclear                      |
| PKV   | W. Paintsville    | Staffordsville  | 3409002        | 47.0               | 5.0            | \$11,438  | \$57,191            | \$7,654                      | \$64,845            | Finish Full Circuit Reclear, from 2020    |
| PKV   | Kenwood           | West Vanlear    | 3409301        | 18.8               | 18.8           | \$11,438  | \$215,038           | \$28,780                     | \$243,817           | Full Circuit Reclear                      |
| PKV   | Kenwood           | Hager Hill      | 3409303        | 49.4               | 49.4           | \$11,438  | \$565,046           | \$75,624                     | \$640,669           | Full Circuit Reclear                      |
| PKV   | East Prestonsburg | Prestonsburg    | 3410601        | 7.4                | 7.4            | \$11,438  | \$84,642            | \$11,328                     | \$95,971            | Full Circuit Reclear                      |
| PKV   | Dewey             | Inez            | 3411401        | 170.8              | 143.9          | \$11,438  | \$1,645,953         | \$220,289                    | \$1,866,241         | Full Circuit Reclear, to complete in 2022 |
| PKV   | Johns Creek       | Raccoon         | 3411802        | 85.1               | 3.0            | \$11,438  | \$34,315            | \$4,593                      | \$38,907            | Finish Full Circuit Reclear, from 2020    |
| PKV   | Garrett           | Garrett         | 3413401        | 38.1               | 1.0            | \$11,438  | \$11,438            | \$1,531                      | \$12,969            | Finish Full Circuit Reclear, from 2020    |
| PKV   | Garrett           | Lackey          | 3413402        | 34.8               | 34.8           | \$11,438  | \$398,048           | \$53,273                     | \$451,322           | Full Circuit Reclear                      |
| <b>Pikeville District Totals</b>                      |                   |                 |                |                    | <b>599.1</b>   |   | <b>\$6,852,608</b>  | <b>\$917,130</b>             | <b>\$7,769,737</b>  |   |
|   |                   |                 |                |                    |                |   |                     |                              |                     |   |
| <b>Kentucky Power Totals</b>                          |                   |                 |                |                    | <b>1,643.4</b> |   | <b>\$18,836,808</b> | <b>\$2,464,266</b>           | <b>\$21,301,074</b> |   |

**Exhibit 2**

| <b>Kentucky Power 2021 Distribution<br/>Vegetation Management Spray Plan</b> |              |                       |
|--|--------------|-----------------------|
| <b>District</b>  | <b>Acres</b> | <b>O&amp;M Budget</b> |
| Ashland  | 690          | \$462,300             |
| Hazard (Ground & Aerial)   | 790          | \$529,300             |
| Pikeville  | 1,300        | \$903,500             |
| <b>Total</b>   | <b>2,780</b> | <b>\$1,895,100</b>    |

**Exhibit 3**

| <b>Kentucky Power Company 2021 Distribution VM O&amp;M Forestry Plan - Summary</b> |                      |                    |                    |                    |
|--|----------------------|--------------------|--------------------|--------------------|
| <b>Activity</b>  | <b>Total O&amp;M</b> | <b>Ashland</b>     | <b>Hazard</b>      | <b>Pikeville</b>   |
| <b>Reclear 5-Year Cycle</b>  | \$18,836,808         | \$5,741,471        | \$6,242,729        | \$6,852,608        |
| <b>Spray - Ground and Aerial</b>   | \$1,895,100          | \$462,300          | \$529,300          | \$903,500          |
| <b>Internal - Existing KY Forestry Staff</b>                                       | \$642,186            | \$214,062          | \$214,062          | \$214,062          |
| <b>Unscheduled / Reactive Maintenance</b>  | \$359,000            | \$75,000           | \$165,750          | \$118,250          |
| <b>O&amp;M Expenditures</b>  | <b>\$21,733,094</b>  | <b>\$6,492,833</b> | <b>\$7,151,841</b> | <b>\$8,088,420</b> |

| <b>Kentucky Power Company 2021 Distribution VM Capital Forestry Plan - Summary</b> |                      |                  |                  |                    |
|--|----------------------|------------------|------------------|--------------------|
| <b>Activity</b>  | <b>Total Capital</b> | <b>Ashland</b>   | <b>Hazard</b>    | <b>Pikeville</b>   |
| <b>Capital associate with Reclear</b>  | \$2,464,266          | \$736,206        | \$810,930        | \$917,130          |
| <b>Reliability Capital - Piloted Program</b>                                       | \$6,500,000          | \$110,000        | \$90,000         | \$6,300,000        |
| <b>O&amp;M Expenditures</b>  | <b>\$8,964,266</b>   | <b>\$846,206</b> | <b>\$900,930</b> | <b>\$7,217,130</b> |

## **Exhibit 4**

### **Kentucky Power Forestry Plan Terminology**

#### **Feeder Breaker Zone**

Synonymous with Station Zone. Segment of line extending from the circuit station breaker to the first operating device. This zone includes unfused taps, but does not include fused taps.

#### **Full Circuit Re-clear**

Entire circuit from the station breaker to the end of the circuit.

#### **Recloser Zone**

Line segment extending from a specific recloser to the next operating device. This zone includes unfused taps, but does not include fused taps.

#### **Partial Re-clear**

A portion of the circuit is planned for re-clearing.

#### **BID JOB**

Planned re-clearing work released as an open, lump-sum bid for competing contractors.

#### **Finish Full Circuit Re-clear**

Re-clearing scheduled to complete Full Circuit Re-clear that began in the previous year.

#### **2<sup>nd</sup> Recloser Zone**

Line segment beginning at the second operating device beyond the station circuit breaker extending to the next operating device. This zone includes unfused taps, but does not include fused taps.

#### **Quality of Service Work**

Tree trimming or removal work scheduled for a line segment to address reliability issues. This work does not conform to re-clearing cycle (e.g. Hot-spotting).