

CASE NO. 2020-00349 AND CASE NO. 2020-00350
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
AND LOUISVILLE/JEFFERSON COUNTY METRO GOVERNMENT
RESPONSES TO JOINT DATA REQUESTS OF
KENTUCKY UTILITIES COMPANY AND
LOUISVILLE GAS AND ELECTRIC COMPANY

1. Provide copies of all electronic files in native format with formulas intact used in your analysis. This includes copies of all workpapers supporting your testimony, analyses, and conclusions.

RESPONSE: In addition to workpapers provided in response to question 6 below, see Exhibit Bunch 7, supporting calculations for Bunch's direct testimony on cost differentials of LED luminaire choices, page 13, lines 14-20.

WITNESS: Richard Bunch

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2. Provide pdf copies of the testimonies submitted by Richard J. Bunch in the following regulatory proceedings identified in Exhibit Bunch-1 to his direct testimony in this proceeding:
- a. MPSC Case U-20697 (Consumers Energy electric rate case)
 - b. MPSC Case U-20561 (DTE Electric general rate case)

RESPONSE:

- a. MPSC Case U-20697 (Consumers Energy electric rate case)**

Attached as Exhibit Bunch 8.

- b. MPSC Case U-20561 (DTE Electric general rate case)**

Attached as Exhibit Bunch 9.

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3. Please refer to page 26 the Direct Testimony of Richard J. Bunch. Please identify all electric utilities that have established FERC 373 sub-accounts for each luminaire types (light source as well as fixture style).

RESPONSE: Lexington-Fayette Urban County Government and Louisville/Jefferson County Metro Government objects to this question as being overly broad, as there is no way to know *all* electric utilities that have established FERC 373 sub-accounts for each luminaire types. Without waiving that objection, LFUCG and Louisville Metro responds as follows:

DTE Electric (Michigan) has created FERC 373 sub-accounts for different kinds of street lighting assets. For example, direct testimony by DTE Community Lighting director Kenneth Johnson in MPSC case U-18150 read, in part,

Mr. Johnston is Manager of Community Lighting for DTE. He testified regarding the company's streetlighting assets. He requested that the accounts for the streetlight assets be revised, with the creation of eight additional subaccounts to separate lighting technologies into two groups: high-intensity discharge, which includes mercury vapor, high pressure sodium, and metal halide; and light-emitting diode (LED) technology. Each of these technology groups would have separate accounts on whether the lighting is fed by overhead or underground wires, and the remaining four new subaccounts are for related equipment and wires. He explained the allocation of costs in existing subaccounts to the new subaccounts...¹

Unlike DTE, KU and LG&E have separate pole charges for streetlights on dedicated poles, and a number of distinct rates for post top/decorative/non-cobrahead fixtures, which can have very different cost bases. To the extent that the Companies

¹ Exhibit Bunch 11, PFD for Michigan PSC case U-18150, pp. 10-11.

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maintain separate rate tables for different kinds of light styles, technologies and poles, tracking costs by sub-accounts will assist in accurate cost allocation and effective asset management.

Exhibit Bunch 12 provides further reference, showing that Portland General Electric uses several sub-accounts to FERC 373.

Exhibit Bunch 13 shows that LG&E already uses two sub-accounts to FERC 373, to separately track streetlights served by overhead versus underground wires.

My additional exhibits are sourced from depreciation cases, illustrating that a primary reason to create sub-accounts is to accurately track costs for assets that may have substantially different service lives. For example, while LED and HID luminaires have similar service lives (around 25 years), HIDs need new lamps, generally every six years. Relamping is an expensive activity and utilities add most of this maintenance expense to rate base. Without separately tracking this cost and allocating it properly to HIDs, rates may not accurately reflect the financial benefits of LED reliability.

In addition, both Companies assess separate pole rates, recognizing that most streetlights are mounted on distribution poles but those mounted on dedicated lighting poles have a different cost basis. Poles have very long service lives and their rates should be set with this fact in mind, rather than using the same depreciation rates as for other lighting assets.

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4. Please refer to page 26 the Direct Testimony of Richard J. Bunch. Please identify all electric utilities that have been ordered by a regulatory commission to establish FERC 373 sub-accounts for each luminaire types (light source as well as fixture style). Provide the name of the utility, the jurisdiction, case number, and order date. Also, provide a pdf copy of each order.

RESPONSE: Lexington-Fayette Urban County Government and Louisville/Jefferson County Metro Government objects to this question as being overly broad, as there is no way to know *all* electric utilities that have established FERC 373 sub-accounts for each luminaire types. Documentation provided in response to question 3 above demonstrates that other investor-owned utilities maintain FERC 373 sub-accounts. Without waiving that objection, LFUCG and Louisville Metro responds as follows:

See Exhibit Bunch 10, Michigan PSC case U-18150 final order and Exhibit Bunch 11, Michigan PSC case U-18150 Proposal for Decision. This case was settled by intervenors and the Proposal for Decision offers more detail on the changes to FERC 373 accounting than does the final order, thus Bunch provides both here.

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5. Please refer to page 30, line 18 of Mr. Bunch’s direct testimony. Mr. Bunch states that “The [Companies’ outage and restoration] figures compare well to peer utilities.” Please identify the “peer utilities” referenced by Mr. Bunch and provide the following for each such peer utility:
- a. Outage and restoration data;
 - b. Number of lights installed;
 - c. The population of the largest city served; and
 - d. Any important differences in lighting maintenance practices compared to the Companies and the other peer utilities.

RESPONSE: Bunch reference DTE Electric and Consumers Energy, both in Michigan. Bunch refers to these as “peer utilities” only with respect to street lighting services. Both Michigan utilities have similar streetlight counts as the Companies in this case, and both are amidst a conversion from HID to LED lighting technology.

Regarding DTE Electric, the following responses are provided:

- a. **Outage and restoration data: please see Bunch’s previously submitted Exhibits Bunch 3 and 4.**
- b. **Number of lights installed: 199,804 as of 2018 (Exhibit 3).**
- c. **The population of the largest city served: Detroit, 674,841 (2019)**

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d. Any important differences in lighting maintenance practices compared to the Companies and the other peer utilities:

- i. DTE predictively re-lamps its HID fixtures to prevent burnouts.**
- ii. DTE washes its LED fixtures on a five-year schedule to prevent lumen depreciation caused by deposition of dirt, air pollution and other contaminants on the luminaire.**

Regarding Consumers Energy, the following responses are provided:

- a. Outage and restoration data: Please see my attached Exhibit Bunch 14.**
- b. Number of lights installed: 171,000 as of 2021.**
- c. The population of the largest city served: Grand Rapids, 198,401 (2019)**
- d. Any important differences in lighting maintenance practices compared to the Companies and the other peer utilities:**

i. Consumers does not maintain HID cobrahead fixtures. Any maintenance visit to an HID cobrahead fixture results in conversion to LED. That is, even if only the lamp has burned out and the HID luminaire remains in working condition, the Company removes the entire luminaire, retires it and installs a new LED fixture.

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6. Refer to Exhibit Bunch-2. Please provide the cost-of-service study or other workpapers used to calculate the Adjusted ROR for each rate class shown in column k of the spreadsheet.

RESPONSE: See the attached spreadsheet, which is Exhibit Bunch 2 in native Excel format with formulas visible. The Adjusted ROR amount for lighting is derived simply by applying my recommended rate of return (Company average) to the given rate base, and adding operating expenses. The resulting revenue reduction is re-allocated to other rates that are currently paying less than Company-average rate of return, in proportion to each rate's share of the sum of current revenue for those rates.

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7. Refer to Exhibit Bunch-2. Please perform the same analysis using the 6-CP and 12-CP cost of service studies provided by KU and LG&E. Provide all workpapers showing the calculation of the Adjusted ROR for each rate class.

RESPONSE: Lexington-Fayette Urban County Government and Louisville/Jefferson County Metro Government objects to this question as being overly broad and unduly burdensome. Neither the municipalities nor their witness, Richard Bunch, has performed this analysis on the loss-of-load-probability methodology on which the Companies have based their rate proposal.

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8. On page 30, lines 18 – 19, and page 31, lines 1 – 2 of Mr. Bunch’s testimony, he argues that DTE should be considered one of KU’s “peer utilities.” Please describe the operating similarities between KU and DTE that make them “peer utilities.” Please include in your answer a discussion of climate, density, age of systems, vandalism rates, tampering rates, etc.

RESPONSE: Per my answer to question 6, Bunch refers to DTE as a peer utility only with respect to the number of street lights deployed and the ongoing transition to LED technology. Subject to that limitations, Bunch would respond regarding other listed comparison factors as follows:

a. Climate: southeastern Michigan and Kentucky obviously have different climates. It may be more precise to examine whether the two regions have weather differences that impact streetlight performance.

i. Temperature conditions that may affect luminaire performance: please see my Exhibit Bunch 15, an excerpt from GE’s LED luminaire specs provided in discovery by the Companies. Note that the luminaire is warranted for operation in ambient temperatures ranging from -40°C to 50°C, both well within the temperature extremes experienced in both Kentucky and Michigan.

ii. Major event days: storms may cause outages by damaging luminaires or their supporting distribution systems.

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1. DTE experienced an average of 9.9 Major Event Days per year including catastrophic storms from 2010-2019.

2. KU/LG&E jointly experienced 59 Major Event Days from 2010-2019 for an average of 5.9/year.

Discussion: KU/LG&E experience fewer Major Event Days on average than DTE, suggesting less weather-related damage to lighting assets and therefore fewer weather-related outages.

b. **Density:** for purposes of this discussion, the most relevant density measure appears to be streetlights per square mile of service area.

i. DTE: 200,000 streetlights/7,600 square miles = 26.3 streetlights/ square mile

ii. KU: 172,819 streetlights/4,800 square miles = 36 streetlights/square mile

iii. LG&E: 88,567 streetlights/700 square miles = 126.5 streetlights/square mile

Discussion: Although DTE serves the metro Detroit region, overall its streetlight deployments appear to be more spread out than either KU or LG&E, suggesting that monitoring and maintenance of lights may be a more challenging proposition for DTE than for the Companies.

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c. Age of systems: Bunch is not aware that either KU/LG&E or DTE have published data on age of their respective lighting systems. As a general proposition, we can assume technology timelines and regulation have affected lighting deployments of both the Michigan and Kentucky utilities similarly:

i. DTE and KU/LG&E have all almost wholly phased out mercury vapor fixtures.

ii. HPS luminaires entered widespread service in the late 1980s. In general, it can be assumed that any HPS luminaire is less than 25 years old, the projected service life. DTE has a significantly smaller percentage of HID luminaires because it has replaced more with LEDs, compared with KU/LG&E.

iii. Almost all LED luminaires are less than five years old in both systems. DTE has a significantly higher percentage of LEDs, which are more reliable than HID's both inherently and because they are newer on average.

d. Vandalism and tampering rates: Bunch is not aware that either KU/LG&E or DTE possess and/or have published data responsive to this request.

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9. Please provide all source documents supporting Mr. Bunch's assertions in testimony regarding DTE, including but not limited to streetlight fleet size, number of HID and LED luminaries, respectively, lighting type, re-lamping data, streetlight outage durations, restoration times, and patrol-and-fix reporting data and practices.

RESPONSE:

- a. **Streetlight fleet size: see Bunch Exhibits 3 and 4.**
- b. **Number of HID and LED luminaires: 72,500 HID and 92,500 LED as of March 2021.**
- c. **Lighting type: this can be interpreted in more than one way. Other than HID/LED counts, DTE also has provided the number of fixtures served by underground and overhead wires, respectively. In MPSC case U-20561, DTE reported having 95,394 company-owned fixtures served by overhead wiring and 70,698 served by underground wiring.**
- d. **Re-lamping data: DTE has not published re-lamping data. "On a planned basis, DTE Electric performs periodic group re-lamping of its high pressure sodium and metal halide lighting luminaires on a 9-year and 3-year cycle, respectively. During 2015, DTE Electric completed its strategic movement from 24,000 hour lamps to 40,000 hour lamps for its high pressure sodium luminaires, an activity that began in 2011. The group re-lamping activity not only improves lighting output, but it also reduces the volume of**

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outage events caused by a failed lamp. DTE Electric does not perform group re-lamping of mercury vapor luminaires as this luminaire technology is obsolete and is being converted to LED upon failure.”

- e. **Streetlight outage durations: please see Bunch Exhibits 3 and 4.**
- f. **Restoration times: please see Bunch Exhibits 3 and 4.**
- g. **Patrol-and-fix reporting data and practices:**
 - i. **Reporting data: To Bunch’s knowledge, DTE has not separately reported patrol-and-fix data. In the footnote to Exhibit 4: “Performance metrics do not include any patrol and fix activities nor any preventative maintenance activities such as Group Relamping; only reactive maintenance repairs are included.”²**
 - ii. **“In an effort to further bolster customer service, in 2019, DTE began to increase its night patrol activities with the intent of proactively identifying and repairing outages before they are reported by our customers. At DTE’s direction, contractors are now responsible for patrolling all E1 Option I streetlights, with the expectation that each community with streetlights owned and operated by DTE will be visited at least once annually. DTE contractors will charge existing, fixed-unit rates only when a light has been identified as requiring maintenance (i.e. a light that is not illuminating, or illuminating but operating intermittently).”³**

² Exhibit Bunch 4, footnote.

³ DTE witness R.A. Bellini, Michigan PSC case U-20561, direct testimony p.RAB-16, lines 18.25.

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