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Request from: Public Utilities Regulatory Authority

Question:

Reference Application, Ex. CLP-IAP-1, pp. 53–54. For each peer-benchmarking or historical-spending metric Eversource relied upon to conclude that CL&P's proposed capital investment is within the calibrated range, explain how the metric supports that conclusion and state whether the metric used to evaluate any proposed investment against a lower-cost alternative.

Response:

Peer benchmarking and historical spending metrics are one input to the Investment Calibration Framework, not the sole basis for its conclusions. Within the Three Bs, the Budget and Balance perspectives are informed by showing whether CL&P's historical costs sit relative to peers and to its own history. They are weighed together with the system-need, reliability and benefit-cost evidence discussed in the responses to UPA-024[i], UPA-025[ii], and UPA-026[iii]. The derivation of the LEI benchmarking results is addressed in Exhibit CLP-PBR-3. Exhibit CLP-IAP-1 relies on those results as reported.

The metrics relied upon, and how each supports the conclusion, are:

Metric	Source	How it supports the conclusion
Capital cost per customer, unit-cost ranking (32nd of 88 nationally; 8th of 22 in the Northeast)	Ex. CLP-PBR-3, p. 17	Eversource's historical capital spending has not been high relative to peers
Capital cost against the econometric benchmark (about 14% below)	Ex. CLP-PBR-3, p. 9	The same result holds after controlling for labor prices, density and scale
Total cost per customer (47th of 88; about 2% below benchmark)	Ex. CLP-PBR-3, pp. 9, 17	Overall cost position is near the national midpoint, not at either tail
Composition and growth of planned distribution spending	Ex. CLP-IAP-4, pp. 19, 30	Most sampled utilities plan more spending on the existing system than on capacity expansion, so a reliability-weighted plan is not an outlier; the study's planned-spending data show modest planned capital growth for Eversource (Ex. CLP-IAP-1, p. 53, ll. 5–9)

Metric	Source	How it supports the conclusion
Real growth in the distribution portion of the residential bill	Ex. CLP-IAP-1, pp. 22, 48	The distribution portion of the residential bill has grown modestly in real terms
RE08 affordability test (historical reliability budget escalated by the Handy-Whitman index)	Ex. CLP-IAP-7, pp. 3–4; Ex. CLP-IAP-1, p. 23, ll. 4–19	The proposed reliability budget is within the escalated historical average, indicating higher costs for a comparable level of work rather than a large expansion of work
Reliability benchmarking (IEEE top quartile, at its lower edge)	Ex. CLP-ELP-1, p. 48 ll. 3–9	Reliability remains in the top quartile but has begun to slip, which is consistent with CL&P being within the calibrated range but moving toward its underinvestment side
OM&A cost per customer (69th of 88 nationally; 11th of 22 in the Northeast; about 12% above benchmark)	Ex. CLP-PBR-3, pp. 9, 17	Higher O&M relative to peers, alongside modest capital spending, can be consistent with rising maintenance needs on an aging system; the comparison is affected by differences in capitalization policy among utilities (pp. 54–56)

None of these metrics are used to evaluate an individual proposed investment against a lower-cost alternative. These metrics are portfolio-level measures that inform where CL&P's overall cost and performance rank. The comparison of individual investments against lower-cost alternatives occurs in the Company's project planning and benefit-cost analysis. For example, for each zone the Company's benefit cost model identifies the most cost-effective upgrade, ranging from tree trimming to a full rebuild (Ex. CLP-TSP-1, p. 34, ll. 16–18; Ex. CLP-TSP-3, slide 34). The Company has also proposed four reporting-only cost-efficiency metrics for the PBMRP term, including capital expense per customer and per line mile (Ex. CLP-ELP-1, p. 112, Table 5; Ex. CLP-ELP-3). These are forward-looking reporting metrics and were not relied upon for the conclusion at pp. 53–54. Please also refer to the Company's response to UPA-024.

Prior Referenced Responses:

[i] UPA-024 Question:

Reference Application, Ex. CLP-IAP-1, pp. 27–28. Explain how the Authority should determine whether a proposed capital investment is efficient for affordability purposes. Also, provide the following:

a. Identify the specific cost, benefit, performance, or alternative-investment information Eversource recommends that the Authority considers in that evaluation; and
b. explain how that comparison distinguishes an efficient investment from one that is "prudent and effective but not highly efficient.

UPA-024 Response:

Exhibit CLP-IAP-1, uses three distinct terms (p. 28, ll. 9–18): prudent, effective and efficient. An investment is prudent if the decision was reasonable when made. It is effective if it delivers the reliability or service benefit it was meant to achieve. It is efficient if it delivers that benefit at an appropriate cost relative to the alternatives. The concept is that PURA should determine efficiency at three levels: (1) whether each project is the lower-cost way to meet its need; (2) whether the portfolio as a whole funds the highest-value work first within the approved budget; and (3) whether one investment can meet several needs.

A. This approach asks that PURA consider the following in determining whether a proposed capital investment is efficient for affordability purposes:

- **Cost**: Project cost estimates, unit costs compared with the Company's own history and a lifecycle cost, including the O&M the investment avoids or adds.

- **Benefit**: Expected reliability improvement (SAIDI, SAIFI, customer minutes of interruption avoided), monetized customer interruption costs, safety and risk reduction, and capacity needed to meet State policy such as electrification.

- **Performance**: Historical results after installation compared with the forecast benefit (p. 57, ll. 3–8). Those results also feed back into the Company's benefit-cost model, recalibrating its estimates of reliability benefit per dollar over time.

- **Alternatives**: Repair versus replacement, non-wires alternatives, deferral with a stated risk, different technology, and bundling of work to reduce mobilization and outage costs.

- **Prioritization**: The rationale for ranking work, such as customer benefit per dollar within the budget. The Company's benefit-cost model evaluates historic outages zone by zone rather than circuit by circuit, uses the Company's data on upgrades made over the past 20 years to estimate SAIDI and SAIFI benefits per dollar, and can be run against a stated reliability objective (Ex. CLP-TSP-1, p. 34, ll. 6–16). The Company's model compares work types at the device level, including reconductoring and backbone and lateral automation (TSP-1 p. 60, ll. 3–7). Resiliency work is ranked using an All-In SAIDI model that combines blue-sky and grey-sky SAIDI with a 1-in-10-year catastrophic storm (Ex. CLP-ELP-1, p. 62, ll. 16–22; p. 72, ll. 10–18).

- **Multi-Needs**: Efficiency also includes whether one investment can meet several needs. Replacing an aging asset with one sized for expected load, such as electrification, can avoid a second investment later, while like-for-like replacement can be the lower-cost choice where that need is not expected. The Company's plan targets locations with multiple needs, such as asset health, capacity, voltage and reliability, so that one investment resolves them together (Ex. CLP-TSP-3, slide 34).

- **Metrics:** The Company's plan also uses cost-efficiency metrics such as dollars per customer-minute of interruption saved, risk-based analytics that weigh the probability and consequence of failure, and planning at the protection-device (zone) level (Ex. CLP-TSP-3, slide 34). To track efficiency after investments are made, the Company has also proposed reporting metrics for capital expense per customer and per line mile, alongside its reliability performance incentive mechanisms, as sponsored by the Leadership Panel (Ex. CLP-ELP-1, p. 103, ll. 10–16; Ex. CLP-ELP-3).

The Company's planning applies this comparison. For each zone, the model identifies the most cost-effective upgrade, which could be anything from tree trimming to a full rebuild (Ex. CLP-TSP-1, p. 34, ll. 16–18). For capacity projects, planners use every available load transfer among stations before upgrading a substation transformer (TSP-1 p. 34, l. 21 – p. 35, l. 3). The Company's resiliency proposal illustrates the comparison. Spacer cable reconductoring delivers nearly two-thirds of the resiliency benefit of undergrounding for about one-third of the cost (Ex. CLP-ELP-1, p. 63, ll. 14–18). The hardening program is projected to avoid approximately 12.4 million customer-minutes of interruption per year, about $37.1 million per year at the Company's estimate of $3 per customer-minute (ELP-1 p. 64, ll. 8–11). Both undergrounding and spacer cable would be effective; spacer cable is the more efficient choice for most zones.

B. Distinguishing "efficient" from "prudent."

The benefit of an investment is harder to measure than its cost. Refer to Ex. CLP-TSP-1, p. 86, ll. 4–7. The benefit-cost analysis reduces uncertainty; it does not eliminate it. Distribution assets serve customers for decades, and decisions about them are made with the information available today. Not every capital investment is made to improve measured reliability. Connecting new customers, adding capacity to serve load growth or to host distributed generation, and relocating facilities for public works projects are required to provide service, and their benefit does not appear in outage metrics.

Further the benefits of a reliability or resiliency investment depend on events whose location and timing cannot be known in advance, so a sound investment may show little measurable benefit over a narrow period. For that reason, effectiveness is better assessed over time and across the system than project by project. The reliability metrics the Company proposes measure performance at the system level (Ex. CLP-ELP-3). The Company refines its estimates as performance data accumulate.

The benefits of an asset that may be in service for decades are spread across the many outages it helps avoid. Efficiency asks the further question of whether the same benefit could have been obtained at lower cost, or whether a higher-value project was displaced. An investment can be prudent and effective but not highly efficient where, for example, an asset is replaced when a targeted repair would have maintained performance, or where a project with lower benefit per dollar is funded ahead of one with higher benefit per dollar. The comparison that distinguishes efficient from effective is therefore made when the work is planned: the ranking of projects by benefit per dollar and the consideration of lower-cost alternatives.

Cost-efficiency must also be looked at with a long-term lens. Without programmatic or technological changes, PURA should expect the marginal benefit per dollar to decline over time as the highest-value work is completed. A declining ratio across the plan is not by itself evidence of inefficiency; the relevant check is that the portfolio remains ordered by value and that funded projects continue to produce net benefits. Two factors offset that decline. As performance results feed back into the model, its estimates become more precise, allowing investment to be targeted more exactly. And the model becomes more important, not less, once the most obvious opportunities have been completed.

When reviewing this model, three features safeguard against a benefit-cost model being tilted toward more spending. First, the model's benefit estimates come from the Company's own data on upgrades made over the past 20 years (Ex. CLP-TSP-1, p. 34, ll. 10–12; Ex. CLP-ELP-1, p. 67, ll. 17–19). Second, customer outage costs are valued using Lawrence Berkeley National Laboratory's Interruption Cost Estimate calculator, an independent source (Ex. CLP-TSP-1, p. 39, ll. 9–13), and inputs such as the value per customer-minute are on the record for review. Third, results are checked after the fact: the amount of revenue support provided for ongoing capital investments for the duration of the PBMRP capital is capped at the approved forecast, reliability is measured through the proposed SAIDI, SAIFI and customer reliability PIMs, and performance is reported annually (Ex. CLP-ELP-1, p. 50, ll. 1–9; pp. 101–102). The Company has also noted that AMI data would improve its ability to measure the benefit customers actually experience from automation investments (Ex. CLP-TSP-1, p. 86, ll. 4–11).

[ii] UPA-025 Question:

Reference Application, Ex. CLP-IAP-1, pp. 31–32 and 54. Identify each quantitative threshold, benchmark, or other criterion used to distinguish underinvestment, calibrated investment, and overinvestment under the Investment Calibration Framework. If Eversource establishes no such thresholds or criteria, state so. Explain how the results presented on page 54 of Ex. CLP-IAP-1 to determine where CL&P's proposed capital investment falls within the framework.

UPA-025 Response:

The Investment Calibration Framework does not establish a numeric threshold, such as a dollar amount per customer or a percentage of rate base, separating underinvestment, calibrated investment and overinvestment. The framework is a way of organizing PURA's review of the level of investment; it is not a formula that produces a number.

That is deliberate. The appropriate level of investment depends on each system's age, condition, load, weather exposure and policy requirements, so a single threshold would not be sound, and it would carry its own unintended consequences. Spending just under a fixed line could be treated as sufficient regardless of the system's condition and spending just over it as excessive regardless of need. Setting investment levels is a judgment made within parameters, much as PURA sets other multi-year program budgets, i.e., the budget is built from historical experience and from the work needed going forward, and decisions are then made within that range.

The framework's focus was to create a methodology of quantifying and prioritizing the investments costs and benefits so that effective and efficient investments can be identified and prioritized, understanding all of the moving parts that change these estimates and potentially whether a project is cost effective. The focus was not meant to provide a single number. The Company's proposed budgets target impacts in relation to what is deemed by analytical evaluation to be effective and efficient.

The level of investment that is effective and efficient also depends on the objective it is measured against. The Company's benefit-cost model identifies the most cost-effective work for a stated reliability objective, such as a given improvement in SAIDI or SAIFI, and it can be run against different objectives (Ex. CLP-TSP-1, p. 34, ll. 12–18; p. 60, ll. 3–5). What is cost-effective therefore depends on the selected objective. The Company's planning presents the choice as a range, which is how the framework expects the question to be approached. The Company identified three investment levels: (1) Sustained Performance, the baseline needed to sustain the system, which carries lower near-term spending but higher emergent-failure and capital risk; (2) the proposed level, which adds Enhanced Reliability and Resiliency to constituted the Targeted System Performance plan; and (3) a higher Advancing the Grid level that the Company does not propose in this proceeding. The framework does not determine the specific dollar amounts at any of those levels. The support for the amounts proposed, including how the capital forecast was developed, is presented by the Leadership Panel and the System Engineering Panel (Exs. CLP-ELP-1; CLP-TSP-1 through TSP-3; see also the response to UPA-033[ii]).

The framework is neutral as to the answer. The crux of the analysis is the identification of a planning and investment approach and a vision on the "end state" that is envisioned as the proper regulatory outcome for customers. Therefore, in place of a fixed threshold, the framework identifies criteria that the Company recommends PURA apply collectively, several of which are quantitative:

Criterion	Indicates Insufficient Investment	Indicates Calibration	Indicates Over-Investment
Project Benefit-Cost Results	High-value projects repeatedly deferred	Portfolio funded in order of value; funded projects above 1.0	Projects funded below 1.0 or lower-cost alternatives passed over
Reliability and Asset Condition	Deteriorating SAIDI/SAIFI, rising equipment-caused and fair-weather outages, growing replacement backlog	Performance stable or improving against commitments	Gains well beyond commitments at a relatively high cost
Composition of Spending	Existing system work is consistently deferred	Spending mainly on maintaining and strengthening the existing system	Building for load that is not there or not expected (p. 47, ll. 3–6)
Cost Benchmarking	Capital investment levels well below peers, alongside rising maintenance needs on an aging system (p. 56, ll. 7–10)	Costs near or below benchmark with adequate performance	Capital investment well above peers without commensurate performance

The Company applies these criteria through two planning approaches. For reliability improvement, it selects projects using the benefit-cost model described in the response to UPA-024, ranked by metrics such as dollars per customer-minute of interruption saved (Ex. CLP-TSP-3, slides 34–35). The ranking sets the order in which work is funded toward the stated objective; it is not a rule that every project above a fixed benefit-cost ratio is built. For asset health, it runs programmatic replacement of asset classes with known degradation patterns, including bare copper overhead conductor, paper-insulated lead cable, right-of-way poles, direct-buried cable, pad-mounted switchgear and substation transformers. The pace of each program reflects historical spending patterns, with reasonable escalations for age and condition (p. 67, ll. 3–5; p. 69, ll. 11–13) (Ex. CLP-TSP-3, 37, 57–62, 71).

The asset programs, their pacing and the associated failure data are presented by the System Engineering Panel (Ex. CLP-TSP-1; Ex. CLP-TSP-3, slides 57–62, 71). Exhibit CLP-IAP-1 offers no opinion on the specific program lengths or budgets. It identifies the age and condition of assets pacing, weighed against cost, as the kind of consideration the Balance step relies on.

Applied to CL&P, the benchmarking results describe the Company's historical position. LEI's unit cost benchmarking ranks CL&P 32nd of 88 utilities nationally and 8th of 22 in the Northeast on capital cost per customer, and 47th of 88 and 8th of 22 on total cost per customer. After controlling for labor prices, network density, scale and other drivers, CL&P's capital costs averaged approximately 14 percent below the model-predicted benchmark and its total costs approximately 2 percent below it over 2015–2024 (Ex. CLP-PBR-3, pp. 9, 16-17)[ii]. Together with the condition of an aging system, those results place CL&P historically within the calibrated range, toward the under-investment side.

The benchmarking results do not by themselves locate the proposed plan. The testimony's conclusion that the proposed investment is calibrated rests on the combination of criteria above: the proposed reliability budget satisfies the RE08 affordability test and the investments carry benefit-to-cost ratios above 1.0 (Ex. CLP-IAP-7), the spending

is directed at the existing system (Ex. CLP-IAP-1, p. 46, l. 10 – p. 47, l. 11), and the need is documented in Exhibits CLP-TSP-1 through TSP-3, including an aging asset base and rising SAIDI (Ex. CLP-ELP-1, p. 42, l. 4 – p. 43, l. 2; p. 48, ll. 3–9).

[iii] UPA-026 Question:

Reference Application, Ex. CLP-IAP-1, p. 54. Explain the analytical basis for concluding that CL&P's below-average capital spending reflects a "drift toward under-investment." Identify the specific reliability, asset-condition, performance, or investment-need used to distinguish efficient below-average spending from underinvestment. Provide all supporting calculations and workpapers.

UPA-026 Response:

Underinvestment and efficiency are separate questions. Underinvestment means investing less than the system needs, given its age, condition, load, weather exposure and the reliability objectives set for it (see the response to UPA-025[iii]). Efficiency relates to whether each dollar spent buys a commensurate benefit (Ex. CLP-IAP-1, p. 85, ll. 5–7). A comparison of spending to an average, whether of peers or of the Company's own history, does not by itself establish either one. In the near term, under-investment can also constitute cost discipline (Ex. CLP-IAP-1, p. 35, ll. 1–6). What indicates whether lower spending is meeting system need is how the system is performing, i.e., whether reliability is stable or improving, or declining. As explained in the response to UPA-025, this is a judgment based on several signals, not a single threshold:

	Reliability Stable or Improving	**Reliability Declining**
Spending below peer average	Lower spending is meeting system need. Most likely where input prices are stable, the utility can lock in long-term procurement, load is changing slowly, and assets are not yet at end of life.	Under-investment signal. Deferred work is showing up as reduced performance.
Spending above peer average	Investment catching up or improving performance. The test is whether each dollar buys a commensurate benefit.	Over-investment signal. Spending is not producing results.

CL&P is not operating in the stable environment described by the "spending below peer average" and "reliability stable or improving" quadrant above (the upper left quadrant). Rather, it is moving toward the "spending below peer average" and "reliability declining" quadrant. Distribution equipment prices have risen well above general inflation, are changing, and much of the asset base is at or near end of life (Ex. CLP-IAP-1, p. 45, l. 18 – p. 46, l. 9; Ex. CLP-ELP-1, p. 42, ll. 4–20). Blue-sky SAIDI was 77.5 minutes in 2025, against a 2021–2025 average of 71.1 minutes, which indicates that SAIDI may be showing signals of decline (Ex. CLP-TSP-1, p. 76, Table 1), while SAIFI remained flat (Ex. CLP-ELP-1, p. 48, 11ll. 3-9). It is important to note, however, that external factors also affect SAIDI/SAIFI performance and this must be factored into the analysis.

Below-average capital spending together with reliability showing initial signs of decline indicates that there is a need for elevated levels of investment in the future.

The specific signs Exhibit CLP-IAP-1 relies upon are (page citations are to Ex. CLP-IAP-1 unless noted):

1. Constrained investment period. The Company refrained from increasing its distribution investment in recent years (Ex. CLP-IAP-1, p. 12, ll. 13–16).

2. Equipment cost inflation. Because of the equipment price increases noted above, a similar nominal budget supports less work over time (p. 45, l. 18 – p. 46, l. 9).

3. O&M pattern. Higher O&M relative to peers, alongside modest capital spending, can be consistent with an aging system that needs more maintenance to stay in service (p. 56, ll. 7–10), although cross-utility O&M comparisons also reflect differences in service territory characteristics, regulatory requirements, company capitalization policy, labor costs and policy-program accounting (pp. 54–56). Increasing emergent failures also take resources away from proactive replacement (Ex. CLP-TSP-1, p. 22, ll. 14–16).

4. Asset condition and reliability. The Company's planning testimony documents an aging distribution system, with major asset classes at or beyond their expected service lives, rising equipment failures, and reliability that remains in the top quartile but has begun to slip, (Ex. CLP-ELP-1, pp. 42, 48–49; Ex. CLP-TSP-1, p. 35; Ex. CLP-TSP-3, slide 58). The asset-level detail is presented by the Leadership Panel and the System Engineering Panel. The point for the framework is the direction of those indicators. The data show a pattern associated with the underinvestment side of the calibrated range rather than one of stability or over-investment.

Taken together, these signs place CL&P within the calibrated range but moving toward its underinvestment side. Exhibit CLP-IAP-1's opinion is directed at the framework and at whether the proposed plan sits within the calibrated range; it is not centered on the amount of investment the Company has identified (p. 16, ll. 10–15). The support for the specific amounts proposed is presented in the Company's planning testimony (Exs. CLP-ELP-1; CLP-TSP-1 through TSP-3) Exhibit CLP-IAP-1 did not rely on separate calculations for this conclusion; it relies on the record evidence cited above, including the LEI benchmarking results and workpapers (Ex. CLP-PBR-3) and the reliability data in Ex. CLP-TSP-1, Table 1.