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Witness: Donald J. Scacco Jr., Digaunto Chatterjee, Douglas P. Horton, Matthew Nelson and Michael Goldman
Request from: Public Utilities Regulatory Authority

Question:

Reference Application, Ex. CLP-IAP-1, pp. 37–45. For each case study, identify the specific factual condition or indicator that Eversource contends is also present at CL&P and cite the CL&P-specific evidence supporting that comparison.

Response:

The case studies are not offered as equivalencies. The testimony presents the case studies as a documented record of how the under-investment tail has unfolded elsewhere, not as a prediction for CL&P, and it draws no causal inference from them for CL&P (Ex. CLP-IAP-1, p. 20, ll. 15–20; p. 36, ll. 7–10 and 18–19).

The case studies are relevant to CL&P because the conditions at work in those situations -- aging assets and exposure to extreme events -- are not unique to those systems. Connecticut is not insulated from major weather events, and the age and condition of distribution assets is a significant determinant of how a system performs when that stress arrives (Ex. CLP-IAP-1, p. 36, ll. 12–13 and 16–18). Where a case involves a condition that is also present on CL&P's system, the table below identifies it with reference to the CL&P-specific evidence. The Investment Calibration Framework is useful only if the ends of the range can be described as well as the middle. The case studies serve that purpose. The case studies show what the under-investment tail looks like when it materializes and what it costs customers, which a framework that were defined only in the abstract could not convey (Ex. CLP-IAP-1, pp. 31–32, 37–45).

A range of outcomes is the right lens because the result of under-investment depends on many interacting factors and on events whose timing cannot be predicted, such as a severe storm or the failure of major substation equipment. The same system condition can produce very different results depending on when and how it is tested, which is why the level of investment has to be decided before those events occur rather than after (Ex. CLP-IAP-1, p. 36, l. 20 – p. 37, l. 2). The view of those tails is based on the witness' experience with tail risk as a regulator in Massachusetts. In that experience, the cost to customers came from how a system performed under stress, and the system's condition going into that stress shaped the outcome.

Case	Condition Identified in the Case Study	CL&P-Specific Evidence
PG&E (pp. 37–39)	Aging assets interacting with vegetation and extreme-event exposure	Bare copper conductor beyond its 40-to-50-year service life and vulnerable to tree contact; bulk transformers and substation assets will be past 50 years; poles below current strength standards (Ex. CLP-ELP-1, p. 42, ll. 4–20; p. 68, ll. 15–19). Connecticut experiences frequent storm-active days, which account for a large share of customer outages (Ex. CLP-ELP-1 p. 63, ll. 4–9). Connecticut has among the heaviest tree cover in the country, most outages are caused by trees or limbs, and most tree-related outages come from tree failure, often from outside the trim zone (Ex. CLP-VMP-1, p. 46, ll. 3–22; p. 47, ll. 1–2). CL&P's inspection and maintenance practices are not suggested to resemble those documented at PG&E
Hawaiian Electric (pp. 39–40)	Balance-sheet capacity relative to catastrophic exposure	CL&P's system is exposed to severe weather, experiencing approximately 35 to 45 storm-active days annually (Ex. CLP-TSP-1, p. 61, ll. 19–21). (Ex. CLP-IAP-1, p. 36, ll. 13–16). The Company's financial capacity and cost of capital are addressed by its cost of capital witness (Ex. CLP-ROE-1)
MBTA (pp. 40–41)	Maintenance crowded out over time, producing a state-of-good-repair backlog	The MBTA case illustrates how carrying costs and deferred maintenance compound over time in a capital-intensive system, and how few options remain once they do. Exhibit CLP-IAP-1 does not contend that a comparable backlog exists at CL&P; the case is included to show the direction of the risk.

Entergy New Orleans (pp. 42-43)	Quantified reductions in distribution capital and maintenance followed by reliability decline	The utility refrained from increasing its distribution investment in recent years (Ex. CLP-IAP-1, p. 12, ll. 13–16; p. 60, fn. 39). SAIDI increasing, with CL&P still in the top quartile at its lower edge; equipment failures account for about 35–40 percent of blue-sky outages (Ex. CLP-ELP-1, p. 48, ll. 3–9; p. 49, ll. 1–6). These indicators show the direction of the trend.
Florida Power & Light (pp. 44–45)	Calibrated investment run through a defined plan, reporting, cost recovery with prudence review, and scrutiny of the benefit-cost case	The Company's proposal: a defined multi-year plan with reliability PIMs, annual reporting, a reliability benefit-cost model described in the Company's testimony, and capital capped at the approved forecast (Ex. CLP-IAP-1, p. 87, ll. 3–13; Ex. CLP-ELP-1, p. 50, ll. 1–9; p. 67, ll. 17–19; p. 118, ll. 6–14). Resiliency work selected by predicted benefit and delivered with spacer cable at about one-third the cost of undergrounding (Ex. CLP-ELP-1, p. 63, ll. 14–18)

The CL&P-specific evidence cited in the table, on asset age and condition, storm exposure and reliability trends is discussed further in the responses to UPA-025[i] and UPA-026[ii]. The underlying data on CL&P's assets and reliability are presented by the Leadership Panel (Ex. CLP-ELP-1) and the System Engineering Panel (Ex. CLP-TSP-1).

Prior Referenced Response:

[i] 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[i]).

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)[i]. 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).

ii 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[ii]). 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.