

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DE 23-039

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Distribution Service Rate Case
Performance Based Ratemaking

DIRECT TESTIMONY

OF

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LIST OF ATTACHMENTS

ATTACHMENT PQH-1	RESUME
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1 **I. INTRODUCTION**

2 **Q. Please state your name, title, and professional qualifications.**

3 A. My name is Philip Q. Hanser. I am a Principal emeritus of The Brattle Group and
4 have over forty years of experience in the energy industry. I have appeared as an
5 expert witness before the U.S. Federal Energy Regulatory Commission (FERC) and
6 numerous state public utility commissions, environmental agencies, Canadian utility
7 boards, arbitration panels, and federal and state courts. From 2008 to 2019, I taught
8 industry professionals about the principles and practice of cost of service calculations
9 and rate design on behalf of the Edison Electric Institute in its Advanced Rates
10 Course. In addition, I served for six years on the American Statistical Association's
11 Advisory Committee to the Energy Information Administration (EIA). Also, I served
12 ten years in the Demand-Side Management Program at the Electric Power Research
13 Institute (EPRI), first as a Project Manager, then Program Manager.

14 Before joining The Brattle Group, I held teaching positions at the University of the
15 Pacific, the University of California at Davis, and Columbia University. I have guest
16 lectured at the Massachusetts Institute of Technology, Stanford University, and the
17 University of Chicago. I served as a Senior Associate at the Mossavar-Rahmani
18 Center for Business and Government at the Harvard Kennedy School (HKS) for six
19 years and co-led HKS's Business and Government Policy Analysis Concentration's
20 seminar in public policy analysis for five years. I was a Lecturer in Boston
21 University's Questrom School of Business's Markets, Public Policy, and Law

1 department and a Senior Fellow at B.U.'s Institute for Sustainable Energy. I am
2 currently also a Lecturer in the Economics Department at Northeastern University.

3 Concerning the case at hand, I have worked extensively on matters regarding
4 regulatory frameworks, notably including performance-based ratemaking (PBR),
5 multiyear rate plans (MYRPs), and performance incentive mechanisms (PIMs) – all
6 issues in the current proceeding. In addition, I have testified before the Hawai'i
7 Public Utility Commission, the Massachusetts Department of Public Utilities, and the
8 Nova Scotia Utility Board on these issues. My resume is attached as Attachment
9 PQH-1.

10 **Q. What is the purpose of your testimony?**

11 A. Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty ("Liberty" or the
12 "Company") requested that I provide context concerning the scope and application of
13 MYRPs and PIMs, including a discussion concerning the structure, mechanics,
14 incentives, and general benefits associated with MYRPs and PIMs. Liberty also
15 requested that I provide my view on whether Liberty's regulatory proposal fits in with
16 other plans and regulatory mechanisms that are in place in jurisdictions across the
17 country and is appropriate for application in New Hampshire.

18 **Q. How is your testimony organized?**

19 A. I have organized my testimony into four sections, including this introductory section.
20 First, I provide an overview of multiyear rate plans in Section II and of performance

1 incentive mechanisms in Section III. Then finally, I provide my conclusions in
2 Section IV.

3 **Q. Please provide some perspective on performance-based regulation and**
4 **alternative regulatory mechanisms.**

5 A. “Alternative regulatory mechanisms” primarily serve as adjuncts to traditional rate of
6 return regulation and address gaps in the traditional regulatory and rate case
7 framework brought about by changing industry conditions. Their scope includes
8 various mechanisms, including revenue decoupling and forecasted test years.

9 Frequently referenced alternative regulatory mechanisms – multiyear rate plans
10 (MYRPs) and performance incentive mechanisms (PIMs) – are generally considered
11 as incentive-based or performance-based regulatory mechanisms. The Brattle Group
12 and other industry analysts have studied, categorized, detailed, and surveyed various
13 alternative regulatory mechanisms in the U.S. and elsewhere in the world.

14 I use performance-based ratemaking (PBR) as an umbrella term that covers MYRPs
15 and PIMs because these mechanisms explicitly reward or penalize a utility based on
16 its performance, either broadly or narrowly.¹ For example, multiyear rate plans
17 provide utilities with a broad-based incentive framework by extending the period
18 between rate cases. As a result, the multiyear framework incentivizes the utility to
19 achieve cost efficiencies because it will be able to retain a portion of any enhanced
20 earnings until the time of the next rate case. Incentive mechanisms are narrower in

¹ I am aware that “PBR” is sometimes used in a less comprehensive sense. For example, I am aware that some have used PBR and PIMs interchangeably and synonymously.

1 scope than MYRPs but are nonetheless performance-based as they attach a reward or
2 penalty to pre-specified utility performance metrics.

3 Liberty's proposed Performance Based Ratemaking plan includes the broad-based
4 incentive mechanism embedded in an MYRP and the narrowly focused performance
5 incentives included in PIMs.

6 **Q. Please describe Liberty's regulatory plan proposal.**

7 A. Liberty's (PBR) proposal includes two primary components: an MYRP and an
8 accompanying PIM plan.

9 Liberty proposes that the MYRP component of its plan will span three rate years, July
10 2023 through June 2024, July 2024 through June 2025, and July 2025 through June
11 2026. Under this plan, as part of its general rate case, Liberty will initially set rates
12 based on projected test year revenue requirements estimated during this initial rate
13 case and then adjust annually. Liberty's proposed MYRP also includes an annual
14 reconciliation mechanism with asymmetrically structured sharing, skewed to benefit
15 customers. Finally, its proposed MYRP also includes an exit ramp provision for
16 circumstances under which the MYRP is considered non-functional.

17 The PIM component of Liberty's proposed regulatory plan includes a Reliability PIM
18 that compares the Company's reliability performance to a group of other electric
19 utilities in New Hampshire, Maine, and Massachusetts; a Time-of-Use (TOU) Rate
20 Adoption PIM; and an Interconnect PIM. In addition, Liberty also proposes one
21 reporting PIM related to electric vehicle charging.

1 **II. MULTIYEAR RATE PLANS**

2 **Q. Are multiyear rate plans and forecasted test years widely applied in the U.S.?**

3 A. Yes. In addition, commissions frequently combine these mechanisms. For example, it
4 is not unusual for a regulatory plan to include an MYRP using two or more forecasted
5 test years as well as performance incentive mechanisms (PIMs).² In addition, PIMs,
6 another component in Liberty’s proposed plan, are in place in numerous states.³

7 **Q. How prevalent are multiyear rate plans in the U.S.?**

8 A. Overall, it is fair to say that MYRPs are part of the regulatory mainstream. As I
9 indicated earlier, a recent survey shows that MYRPs are in place for electric utilities
10 in over a dozen states. I note here that counting the incidence of MYRPs is more
11 challenging than it may seem at first blush for several reasons. One, states are
12 frequently served by multiple utilities, each of which may operate simultaneously
13 under various regulatory mechanisms. Surveys note the criteria for classifying a state
14 as having MYRPs or not, but these are not necessarily consistent across surveys.
15 Finally, the discrepancies among the counts are because MYRPs are not always
16 continuously applied. For example, Consolidated Edison is generally regulated under
17 an MYRP approach. Still, its electric business was under a single-year rate case plan

² A December 2021 survey of MYRPs for electric utilities found that MYRPs are in place in 12 states, and that MYRPs are in place for gas and electric utilities in 14 states. However, I note that some states operating with MYRPs are not included in the above referenced survey (*e.g.*, Maryland and Illinois). See Lowry et al., [*PBR Rules for North Carolina Electric Utilities*](#), In the Matter of Rulemaking Proceeding to Implement Performance-Based Regulation of Electric Utilities, Docket No. E-100, Sub 178, December 17, 2021.

³ A slightly dated survey of PIMs was conducted by O’Neil Management Consulting LLC, “Recommendations for Strengthening the Massachusetts Department of Public Utilities Service Quality Standards,” (December 13, 2012). It provides a snap shot of PIMs in place roughly ten years ago.

1 for a short time in early 2015 and was, thus, excluded from the count of electric
2 utilities with MYRPs for that year.

3 **Q. How are rates adjusted during the term of a multiyear rate plan?**

4 A. MYRPs typically allow for annual rate adjustments or revenue adjustments via a pre-
5 determined mechanism.⁴ One form of annual rate adjustment is the “stair-step”
6 approach, under which rates for the term of MYRP are based on forecasts of revenue
7 requirements, typically a series of forecasted test years. For example, a three-year
8 MYRP may be based on three future test years under this approach. Rates are then
9 prescribed for each of the years within the scope of the MYRP.⁵

10 A second form of adjustment is the “I-X” approach, where “I” is the rate of inflation
11 and “X” is a productivity factor. Under this approach, the initial year typically starts
12 with revenue requirements and rates based on a single test year. Rates or revenues are
13 then escalated in the following years using the I-X formula.⁶ This approach to annual
14 rate adjustments is more prevalent in the U.K., Australia, and Canada than in the U.S.

15 **Q. What are the reasons states cite for adopting multiyear rate plans?**

16 A. There are several reasons, but two main motivations are: (1) reducing the frequency
17 of full rate cases and (2) improving cost control incentives. It is essential to remember

⁴ These adjustments are sometimes referred to as Attrition Relief Mechanisms (ARMs).

⁵ Additional modification may be made to smooth out erratic stairsteps. For example, Consolidated Edison’s recent multiyear rate plan used a “levelized” stair-step ARM to avoid rate shock in the first year. See State of New York Public Service Commission, Order Approving Electric and Gas Rate Plans, Docket No. 16-E-0060, January 25, 2017, pp.4-5, 19.

⁶ Annual adjustments using an I-X approach tend to be relatively smooth on a year-to-year basis, although they may not be completely linear as the inflation or productivity terms may be projected to change on a year-to-year basis.

1 that each state regulatory commission has unique motivations for adopting its
2 regulatory framework, which may include additional factors.

3 **Q. Why have multiyear rate plans been adopted to reduce the frequency of rate**
4 **case filings?**

5 A. When utilities operate in an environment characterized by increasing costs and
6 declining sales growth, there is a strong possibility of negative regulatory lag, which
7 can result in utilities filing frequent rate cases to “catch up.” As a result, many
8 MYRPs have been adopted mainly to manage and reduce the frequency of rate cases.
9 For example, California and New York regulators have adopted the MYRP approach
10 for all utilities under their jurisdictions and have established general rate case cycles.

11 Similar reasoning also appears to have been the case in Washington State. For
12 example, Washington Utilities and Transportation Commission cited the need to
13 relieve Commission staff and stakeholders “from the burdens of almost continuous
14 general rate case proceedings” when it approved a multiyear rate plan for Puget
15 Sound Energy that was in place from 2013 to 2016.⁷

16 **Q. Please describe the circumstances in which commissions have adopted multiyear**
17 **rate plans to enhance cost control incentives.**

18 A. A second frequently cited motivation for adopting MYRPs concerns incentives for
19 utilities to control costs or otherwise strive to achieve cost efficiencies. Rate

⁷ Washington Utilities and Transportation Commission, Order 07, Docket Nos. UE-121697 and UG-121705 (consolidated) and Docket Nos. UE-130137 and UG-130138 (consolidated), June 25, 2013, p.8.

1 regulation of utilities is based mainly on costs. Still, it is not a purely cost-plus
2 methodology. Expected revenue requirements and associated earnings are initially set
3 in a rate case based on projected costs. However, they are not updated on an ongoing
4 basis to reflect costs actually incurred until the next rate case. If a utility improves its
5 operating efficiencies (in the period following a rate case), it can retain the increase in
6 its earnings until the next rate case as a result of regulatory lag. By extending the time
7 between rate cases, multiyear rate plans provide a greater incentive for the utility to
8 reduce costs due to its ability to retain the increased earnings over a more extended
9 time. The utility passes the resulting cost efficiencies onto customers in the next rate
10 case through a lower revenue requirement. Also, the converse is true: if it incurs costs
11 higher than those used in setting rates, it will earn less than the authorized level of
12 return due to regulatory lag.

13 **Q. Do multiyear rate plans typically include other notable provisions?**

14 A. Yes. MYRPs frequently include a “re-opener” provision. Regulators, consumer
15 advocates, and other interested parties often hesitate to agree to an open-ended
16 commitment to an MYRP to avoid unforeseen circumstances that may cause utility
17 earnings to be significantly higher or lower than authorized levels. The most common
18 specified trigger for review or termination concerns returns falling below specified
19 levels. Re-opener provisions, sometimes called “off-ramps” or “exit-ramps,” can also
20 be more general and less specified. These arise in recognition that unforeseen factors
21 (*e.g.*, changes in tax laws or interest rates) may necessitate plan reviews, plan
22 changes, or termination of a plan.

1 **Q. Are annual adjustments frequently used in multiyear rate plans?**

2 A. While some states do not include annual adjustment mechanisms, irrespective of
3 utility over- or under-earnings,⁸ annual reconciliations are in place in most states that
4 apply MYRPs to electric utilities – although no single approach is universally
5 applied. In addition, in many states, annual reconciliations are sometimes triggered
6 for over-earnings only (*i.e.*, not under-earnings).⁹

7 Sharing provisions that address both under- and over-earnings are also included in
8 many MYRPs. For example, commissions in the District of Columbia and Maryland
9 have applied MYRPs with sharing to Pepco’s over-earnings and under-earnings.
10 Specifically, in the District of Columbia, Pepco automatically shares over-earnings
11 with customers and is eligible for sharing under-earnings, albeit requiring an
12 application to the Commission.¹⁰ In Maryland, over-earnings are returned to
13 customers with carrying costs, and under-earnings are collected from customers

⁸ At last review, this includes Arizona, applied to Arizona Public Service; California, applied to Pacific Gas & Electric, PacifiCorp, San Diego Gas & Electric, Bear Valley Electric Service, and California Pacific Electric; Florida, applied to Florida Power & Light, Gulf Power, Duke Energy Florida, and Tampa Electric; and, Virginia, applied to Virginia Electric Power and Appalachian Power.

⁹ At last review, these states include Colorado, Georgia, Iowa, Louisiana, North Dakota, New York, Ohio, and Washington. These plans include several different types of earnings sharing arrangements, including some that have tiers of earnings with a different sharing percentage assigned to each tier.

See EEI 2015 Update.

¹⁰ Public Service Commission of the District of Columbia, Formal Case No. 1156, Order No. 20755, June 8, 2021, p. 68.

1 without carrying costs.¹¹ Provisions for sharing under- and over-earnings by the
2 Hawaii PUC are also included in the MYRP applied to HECO.¹²

3 In other cases, the utility may petition the Commission for a rate increase when
4 under-earning during the term of the MYRP.¹³

5 **Q. Should MYRPs symmetrically address over- and under-earnings?**

6 A. Yes, I think it is reasonable to include “earnings sharing” provisions (also referred to
7 as earnings sharing mechanisms, or ESMs) for over- and under-earnings cases.
8 Accordingly, my opinion here addresses sharing for under- and over-earning. I am
9 aware that some parties opine that the utility should bear all downside risk (*i.e.*, all
10 under-earnings). However, including earnings-sharing provisions that allow for
11 sharing over-earnings but none for under-earnings is an extremely unbalanced
12 approach.

13 **Q. What is the purpose of the deadband in an ESM and MYRP?**

14 A. The deadband is the neutral zone in which no reconciliation is triggered. Narrow
15 deadbands, with full or partial reconciliation, provide a high degree of assurance that

¹¹ Application of Potomac Electric Power Company for a Multi-Year Rate Plan for the Distribution of Electric Energy and Other Tariff Revisions, Formal Case No. 9655, October 26, 2020, p.55.

¹² Specifically, sharing for both under- and over-earnings are 50%-50% between customers and the utility for earnings within 150 basis points outside the deadband, and 90%-10% sharing between customers and the utility for any further under- and over-earnings. See Hawaii Public Utilities Commission, [Summary of Phase 2 Decision & Order Establishing a PBR Framework](#), December 23, 2020.

¹³ In its MYRP, Georgia Power includes an annual reconciliation in the case of over-earning, and also includes a provision under which Georgia Power can request a tariff change to bring it back to the lower end of the allowable ROE range if its earnings fall below the plan’s allowable band. Georgia Public Service Commission, Order Adopting Settlement Agreement, Document No. 151108, Docket No. 36989, December 23, 2013, p.5.

1 under-earnings will be “trued up” in whole or part. A near guarantee effectively
2 removes any incentive for performance improvement. “Formula rate” plans include
3 full (or nearly full) true-up provisions. Wide deadbands incentivize utilities to
4 improve performance because they can retain over earnings within the band.
5 Deadbands that are too wide are no different than a rate case stay out. When
6 combined with sharing provisions (skewed slightly to favor customers), deadbands
7 enhance performance improvement incentives while providing some safety net for
8 unforeseen circumstances.

9 **Q. Does Liberty’s proposed annual reconciliation provision provide an incentive for**
10 **performance improvement?**

11 A. Yes. The annual reconciliation mechanism in Liberty’s proposed MYRP includes an
12 ESM, triggered when the utility’s earnings fall outside of a 200 basis point deadband
13 (+/- 100 basis points). For earnings greater than 100 basis points but less than 200
14 basis points relative to the authorized ROE, customers receive 50% (of over-
15 earnings). In addition, customers receive 75% of any over-earnings above 200 basis
16 points. For under-earnings below the deadband through negative 200 basis points,
17 50% would be recovered from customers. For more extreme under-earnings (beyond
18 200 basis points below authorized ROE), Liberty’s proposed MYRP has customers
19 paying the 75% of costs and the Company covering the remainder to bring earnings
20 back to the negative 200 basis point level. This approach mitigates the need for
21 exiting the MYRP and requesting a new general rate hearing.

1 Liberty's adjustment mechanism is symmetric in that it includes provisions for
2 sharing for both under- and over-earnings that are comparable in variability. It is also
3 symmetric in the percentages by which Liberty's customers participate in Liberty's
4 over- or under-earnings. Compared to Green Mountain Power's (GMP) approved
5 MYRP,¹⁴ Liberty's treats the relative risk of over- and under-earning symmetrically,
6 whereas GMP's places the customer at greater risk with its asymmetric earnings
7 bands. This increased customer risk arises because GMP's ESM has a greater width at
8 the under-earnings side, entirely placing the burden of making up the deficiency on its
9 customers.

10 **Q. What is the role of forecasted test years in Liberty's proposed MYRP?**

11 A. Liberty has proposed a three-year rate year (RY) forecast, annually from July 2023
12 through June 2026. Some way to forecast rate years is a necessary component of a
13 stair-step MYRP.¹⁵ For RY1, Liberty proposes determining revenue requirements
14 using known and measurable changes to assets (*i.e.*, capital) and operating and
15 maintenance (O&M) expenses. Capital is forecast for RY2 and RY3 based on capital
16 spend plans, and O&M is forecasted based on an escalation factor.

17 Forecasted rate years are part of the rate case through which MYRPs are initiated and
18 are subject to review by interested parties and ultimate approval by the Commission.

19 Careful forecasting should minimize the need for rate adjustments. However,

¹⁴ GREEN MOUNTAIN POWER MULTI-YEAR REGULATION PLAN at p. 20. Further see for the complete and approved filing at <https://greenmountainpower.com/wp-content/uploads/2021/09/Exh.-GMP-ER-RB-1-2023-Multi-Year-Regulation-Plan.pdf>

¹⁵ The I-X approach, referenced earlier, adjusts rates or revenues using the I-X formula.

1 unforeseen circumstances can materially impact earnings – hence the need for
2 symmetrical earnings sharing.

3 **Q. What are “reconciliations” and “adjustments” as used in Liberty’s proposed**
4 **MYRP?**

5 A. Liberty’s proposed MYRP allows rate adjustments based on deviations from realized
6 returns on equity (ROE), with specific adjustments specified through an earnings-
7 sharing mechanism. Calculating ROE for each year requires using the respective
8 yearly rate base, which, in turn, requires that the rate base be updated (or reconciled)
9 accordingly. Rate base updates are based on specific project data, subject to a 10%
10 cap on variances. ROE can then be calculated based on the corresponding rate base. If
11 warranted under the earning-sharing mechanism, rates would then be adjusted. This
12 last step has been referred to as rate reconciliation or rate adjustment.

13 **Q. What is your opinion of Liberty’s proposed annual adjustment mechanism?**

14 A. The annual adjustment mechanism needs to be considered together with the other
15 components of Liberty’s MYRP proposal, specifically, the rate year forecast
16 methodology, the deadband, and the earnings sharing mechanism. In their entirety,
17 these components provide a balanced approach to the annual adjustment mechanism.
18 Forecasts of rate base and O&M are transparent and allow for input in the rate case
19 process. The deadband (*i.e.*, the zone in which annual adjustments are not triggered)
20 is sufficiently sized considering that any adjustments are skewed to customer benefit
21 (*i.e.*, Liberty covers 50% of under-earnings, and customers receive 50% of over-

1 earnings). Importantly, Liberty's proposed MYRP preserves the incentives for cost
2 control by setting rates based on realistic utility-specific forecasts and providing for
3 the possibility of a reward if the utility can outperform forecasts while requiring that
4 the utility absorb most of the loss if it underperforms.

5 **Q. How could a multiyear rate plan approach benefit Liberty's stakeholders?**

6 A. An MYRP leads to more gradual and deterministic rate increases for customers,
7 which many customers value. It enables them to make more informed decisions about
8 potential investments in energy efficiency, distributed energy resources, and other
9 technologies or options. Additionally, the proposed multiyear approach better aligns
10 incurred costs with revenue recovery and introduces transparency concerning
11 Liberty's plans and cost projections.

12 Finally, a benefit of the multiyear rate plan approach is reducing the frequency of rate
13 cases. This saves participating parties the cost associated with filings, reviews, etc.,
14 and, perhaps more importantly, frees up time and resources to examine and advance
15 other goals and initiatives.

16 **Q. What is the typical timeframe for a Multiyear Rate Plan?**

17 A. The most common term I have seen is three years, in line with Liberty's proposal.
18 This period is also typically the case for first-time or pilot MYRPs. Shorter time
19 frames tend to weaken the incentives incorporated into the MYRP framework. The
20 off-ramp or exit mechanism allows the Company and the Commission to shorten the
21 MYRP's term if necessary.

1 **Q. Please comment on Liberty’s temporary rate request before the Commission**
2 **approves the MYRP.**

3 A. Temporary or interim rates are not unusual when implementing an MYRP for the first
4 time because the initiating rate case and rate year are frequently not fully aligned.
5 However, in this case, Liberty’s RY 1 is scheduled to begin on July 1, 2023, with the
6 understanding that the initiating rate case will not be completed by then. Accordingly,
7 Liberty proposes implementing temporary (also called interim or bridging) rates on
8 July 1, 2023, and they will remain in effect until MYRP RY1 rates are finalized. At
9 this time, a one-time reconciliation will take place.

10 **Q. Does Liberty’s proposed stair step MYRP operate the same as the step**
11 **adjustment methodology that New Hampshire utilities have historically**
12 **employed between rate cases?**

13 A. The stair-step forecast mechanism proposed for use in Liberty’s MYRP adjusts both
14 capital and O&M each year of the MYRP. In contrast, the step adjustment
15 methodology previously used in New Hampshire only addressed annual step
16 adjustments to a defined scope of capital projects. The historical methodology for
17 ratemaking in New Hampshire was a rate stay-out with allowance for adjustments to
18 specific capital projects. The proposed MYRP is more comprehensive in how it sets
19 rates on a multiyear basis. Specifically, the revenue requirements are set for each
20 RY1, RY2, and RY3 based on forecasted capital plans and O&M. The Commission
21 can review performance against forecasts yearly.

1 **Q. How are changes in capital plans addressed under Liberty's MYRP?**

2 A. Even well-developed utility capital plans and forecasts are subject to change with
3 circumstances and priorities. Under Liberty's proposed MYRP, forecasted capital
4 projects are included in the R.Y. revenue requirement calculations. However, the plan
5 also allows for removing capital costs from the ratebase (and hence revenue
6 requirements) if a capital project is not brought into service. This approach ensures
7 that the utility is not earning a return on an inflated rate base. In practice,
8 undeveloped capital projects will be replaced with other projects deemed of higher
9 priority or need. Under the MYRP, the sum of the value of replacement projects is
10 required to exceed the value of the canceled projects. Also, the prudence of
11 replacement projects can be assessed at the end of RY3 to ensure that the replacement
12 projects are in the customers' best interests.

13 **Q. Is a variance adjustment for capital projects necessary under Liberty's MYRP?**

14 A. Yes. Some reconciliation of capital costs is necessary in an MYRP, similar to the role
15 previously played by the step adjustment. Under Liberty's proposal, acceptable
16 variances are set at 10%. For positive variances (*i.e.*, when incurred costs exceed
17 110% of proposed costs), the amount beyond the 10% variance is deferred as a
18 regulatory asset on which Liberty can seek recovery for deferral later. Negative
19 variances (*i.e.*, when project spending falls below the projected budget) are subject to
20 immediate adjustment.

1 **Q. Does Liberty's MYRP include any additional safeguards?**

2 A. Yes. Liberty's MYRP includes a provision for prudence review at the end of the
3 MYRP. This provision ensures that the MYRP mechanism does not inadvertently
4 advance overspending or that Liberty does not pursue projects that the Commission
5 finds ill-advised.

6 **Q. Is revenue decoupling needed if an MYRP with annual adjustments is also in**
7 **place?**

8 A. While there is an overlap between these two mechanisms, there are also significant
9 differences, which is a reason to keep both in place. Adjustments under MYRPs are
10 subject to deadband and earnings sharing, irrespective of the cause of under- or over-
11 earnings. In contrast, a full or partial decoupling mechanism is designed to hold the
12 utility indifferent to changes in sales. Incorporating the goal of decoupling into the
13 MYRP would dilute the decoupling mechanism and bundle adjustments due to
14 changes in costs with changes in returns due to changes in sales. These contrasting
15 impacts on the utility explain why several jurisdictions implementing MYRPs also
16 use decoupling mechanisms.

1 **III. PERFORMANCE INCENTIVE MECHANISMS**

2 **Q. How, in general, do Performance Incentive Mechanisms work in the regulatory**
3 **environment?**

4 A. Performance Incentive Mechanisms (PIMs) assign financial rewards and/or penalties
5 to specific areas of utility performance or policy outcomes.¹⁶ PIMs can be applied
6 within any regulatory framework and are frequently applied with MYRPs to
7 counterweight the incentives to control costs or provide incentives for utilities to
8 advance policy goals.

9 I have classified the various PIMs that are in place in the U.S. into two main
10 categories: “traditional” and “emerging.” Traditional PIMs reflect standard measures
11 of utility operations, notably system reliability, customer service, and safety. Utilities
12 and regulators have typically tracked these measures for some time and are well
13 known to nearly all parties participating in utility regulatory proceedings. They are
14 only considered PIMs when financial incentives (rewards, penalties, or both) are
15 included. Some of these PIMs have been in place for decades.

16 The PIM concept – adding rewards or penalties to performance measures to
17 incentivize utilities to pursue specified goals – has received renewed attention
18 recently as regulators and policymakers have introduced new and sometimes
19 challenging goals. “Emerging” PIMs refer to a more recent version of PIMs that
20 address policy goals, such as emission reductions and DER interconnections. Newly

¹⁶ An overall plan concerning such performance incentives is generally referred to as a “PIMs plan.” Individual measures (and targets) are also sometimes referred to as a PIM; *e.g.*, a SAIDI PIM.

1 emerging PIMs incentivize utilities to pursue activities beyond their core functions or
2 pursue activities or initiatives that may be otherwise contrary to utilities optimizing
3 their financial performance. For example, a well-known set of emerging PIMs
4 developed in New York are known as earnings adjustment mechanisms (EAMs).¹⁷
5 These PIMs set targets and provide incentives for DER utilization, peak reduction,
6 and energy efficiency, among other measures.¹⁸

7 **Q. Please describe the structure of performance incentive mechanisms.**

8 A. The design for PIMs typically includes four key components. First, a PIM requires
9 the specification of a performance measure, such as SAIDI (for system reliability).
10 The performance measure is ideally readily quantifiable and outcome-based (*e.g.*,
11 minutes of service interruption).

12 Second, a target, defining the expected level of performance, is required for each PIM
13 measure. Ideally, the target level should balance the relevant benefits and costs
14 associated with achieving the desired level of performance. Targets for PIMs should
15 be set such that a utility can realistically achieve the desired performance level, even
16 if it requires a “stretch.” Conversely, it does not incentivize the utility if the target is

¹⁷ The New York Public Service Commission believes that the EAMs are a transition to fundamentally different business models. See State of New York Public Service Commission, Order Adopting a Ratemaking and Utility Revenue Model Policy Framework, Case 14-M-0101, May 19, 2016, p.60.

¹⁸ See Con Edison 2018 Energy Efficiency Earnings Adjustment Mechanism Achievement Report, April 1, 2019 and Consolidated Edison, Re: Case 16-E-0060 – 2018 Distributed Generation Interconnection Earnings Adjustment Mechanism Report, April 1, 2019.

1 too stringent (or too easily achieved). Thus, a utility's past performance is considered
2 when setting a PIM's target.

3 Third, PIMs can include a deadband, or a neutral zone, in which no financial
4 incentive is applied. Using a deadband reflects the variability of factors associated
5 with achieving the target performance level. It avoids the need for financial rewards
6 or penalties to be applied annually due to slight performance variances. Conversely,
7 if the deadband is overly tight, the utility may be rewarded (or penalized) for
8 circumstances beyond its control. Deadbands are typically set based on assessments
9 of reasonableness or statistical variation of a utility's past performance.

10 Fourth, PIMs include a financial incentive structure, which specifies the level of
11 reward/penalty and how the reward/penalty is applied. Financial incentive structures
12 may include rewards, penalties, or both. The financial incentive structure for a PIM
13 may also include an incentive formula, which determines the level of incentive
14 applied. Incentive formulas may reflect a maximum incentive applied whenever the
15 measure is outside the deadband or may be graduated, such that a financial incentive
16 is applied at an increasing level beyond the target to some maximum level.

17 The amount of incentive included in a PIM plan varies considerably across
18 jurisdictions. Review of several PIM plans in the U.S. indicates that the maximum
19 penalty amount for PIMs ranges from less than 40 basis points (Commonwealth
20 Edison in Illinois) to more than 150 basis points (Consolidated Edison in New York).
21 Rewards for PIMs are less common than penalties. The reward levels can be sizable

1 and within the range of PIM penalties. For example, the maximum allowable reward
2 for the EAMs (emerging PIMs) was set to 100 bps in New York.

3 **Q. What is the appropriate scope for a PIM plan?**

4 A. There is no standard for the number of PIMs a plan should include or whether to set
5 PIMs at aggregate or disaggregate levels. Still, it is reasonable to recommend that
6 PIMs plans start at a simple and manageable level. Thus, it is reasonable for a new
7 PIMs plan to include a few PIMs specified at the system-wide level rather than
8 consisting of numerous disaggregated measures. A review of various PIMs plans
9 indicates that the more detailed and expansive plans (for example, plans that include
10 many performance measures broken down by geographic region) have evolved (for
11 example, Consolidated Edison). Detailed breakdowns can evolve as interested parties
12 gain experience with PIMs and identify areas not sufficiently covered in aggregate
13 measures. Experience with emerging PIMs is more limited, but here, too, starting
14 simply appears to be the informal rule.

15 **Q. Are rewards *and* penalties typically included in PIMs?**

16 A. Not always. In practice, penalties (and not rewards) tend to be attached to traditional
17 PIMs, and rewards (frequently without penalties) tend to be attached to emerging
18 PIMs and other policy goal-related PIM-like measures (*e.g.*, energy efficiency). I
19 have not found definitive reasoning why Commissions chose to attach a reward or
20 penalty to specific PIMs. Still, they are reasonably explained based on underlying
21 assumptions concerning the perceived marginal costs and marginal benefits

1 associated with the PIM areas.¹⁹ For example, a penalty-only incentive design can be
2 justified if the targeted performance level for a subject PIM is at the point where
3 regulators believe that marginal cost roughly equals marginal benefits. This means
4 that utilities should make expenditures to meet this level to satisfy customers but that
5 customers do not place additional value (benefit) on higher levels of service.

6 Following from this, it is reasonable for regulators to include rewards in the incentive
7 structure for traditional PIMs if they value enhanced levels of, *e.g.*, reliability or
8 customer service.²⁰ For example, the California Public Utilities Commission (CPUC)
9 included rewards and penalties in the reliability PIMs for San Diego Gas & Electric.
10 CPUC found it ineffective to adopt a PIMs plan characterized by “unbalanced
11 incentives” and found that “without rewards for marked improvement, there is a
12 lesser likelihood that the company will strive to exceed the target and only minimize
13 the risk of penalty.”²¹ Including rewards in the incentive structure for traditional PIMs

¹⁹ Unfortunately, quantification of marginal costs and marginal benefits of specific aspects of service delivery are not always readily reported or apparent. Thus, in this discussion, I refer to “perceived marginal costs and marginal benefits.” Some utilities and regulators have considered the value of lost load (VOLL) as an indicator of benefit when conducting benefit-cost analyses of incremental investments in reliability. However, absent strong indicators to the contrary, some regulators and utilities view current levels of service as representative of marginal cost / marginal benefit equilibrium. This is not an unreasonable assumption considering that current levels of reliability and customer service have evolved over time and reflect interventions by the utility, regulators and a range of affected parties.

²⁰ There are also other arguments for taking a symmetric approach to PIM incentives. Regulatory guidelines typically emphasize the importance of providing utilities with a reasonable opportunity to earn the authorized rate of return, sometimes referred to as a fair return standard. In other words, the chance that a utility will realize financially favorable outcomes (*i.e.*, earning at the authorized level) should be roughly equal to its probability of realizing an unfavorable one (*i.e.*, earning below the authorized level). It can be argued that a penalty only PIM (*i.e.*, an asymmetrical incentive) results in a higher probability that a utility will earn a rate of return that is lower than its authorized rate of return, thereby conflicting with the fair return standard.

²¹ California Public Utilities Commission, Decision 08-07-046, Application 06-12-009, July 31, 2008, p. 56.

1 may be relevant going forward, as higher levels of reliability and resilience are
2 increasingly important to consumers.

3 The incentive structure applied to emerging PIMs is primarily based on rewards.
4 Commissions appear to have concluded that customers (and society) benefit from
5 achieving specific policy goals, such as integrating Distributed Energy Resources into
6 utility distribution systems. That is, the marginal benefits of achieving these goals are
7 perceived as higher than the marginal costs needed to get there – leading to a reward-
8 based incentive.

9 **Q. What PIMs does Liberty propose to include as part of its PBR Proposal?**

10 A. Liberty proposes three PIMs: Reliability, TOU Rate Adoption, and Interconnect
11 PIMs.

12 **Q. Please briefly describe Liberty's proposed PIMs.**

13 A. In its reliability PIM, Liberty proposes to compare the Company's System Average
14 Interruption Frequency Index and System Average Interruption Duration Index
15 (SAIFI and SAIDI) against the same reliability metrics of electric utilities in New
16 Hampshire, Maine, and Massachusetts. SAIFI measures how often customers
17 experience outages, and SAIDI measures outage lengths. Specific calculation
18 methods may vary across different standards. SAIFI is generally calculated as the
19 number of customers interrupted by an outage divided by the number of customers on
20 a system. SAIDI is generally expressed as the total outage duration experienced by
21 customers divided by the number of customers. Every year starting in Rate Year 2 of

1 the MYRP, Liberty will compare the Company's reliability performance as measured
2 by SAIFI and SAIDI against its six peer electric utilities using data published by the
3 U.S. Energy Information Administration. If Liberty's SAIFI and SAIDI scores are
4 both best or second-best (lowest or second-lowest), it will receive an incentive
5 payment. The Company will be penalized if its SAIFI and SAIDI scores are both
6 worst or second worst.

7 In its TOU Rate Adoption PIM, Liberty proposes to measure TOU rate enrollment
8 and participation. When customers participate in TOU rates, they shift their energy
9 consumption away from peak system hours, creating load savings through deferred or
10 avoided investments in generation, transmission, and distribution infrastructure. The
11 Company will receive an incentive if TOU rate adoption reaches 0.5% of residential
12 customers in Rate Year 3.

13 In its Interconnect PIM, Liberty proposes to track and evaluate the interconnection
14 time for inverter-based facilities (*e.g.*, distributed solar photovoltaic resources) of a
15 specific size. The Company will receive an incentive payment if the interconnection
16 time is significantly shorter than the time currently required in the tariff (40 days).

17 **Q. How does the portfolio of PIMs proposed by Liberty compare to others**
18 **elsewhere in the U.S.?**

19 A. Both the traditional and emerging PIMs proposed by Liberty have been applied
20 elsewhere. As discussed above, reliability PIMs have been used in California and

1 Rhode Island by National Grid.²² Likewise, PIMs similar to Liberty’s TOU Rate
2 Adoption PIM have been proposed in other jurisdictions. For example, the State of
3 Illinois has a variety of so-called “smart grid” metrics for its utilities related to
4 customer participation in various forms of time-varying pricing programs.²³
5 Similarly, Xcel Minnesota proposed a PIM for the percentage of E.V. owners
6 enrolled in managed charging rates and another PIM for the percentage of E.V.
7 charging taking place during off-peak hours (compared to total E.V. charging).²⁴
8 PIMs that address DER interconnections similar to Liberty’s Interconnect PIM have
9 also been applied in other jurisdictions. For example, HECO’s Interconnection
10 Approval PIM was designed to incent the reduction of interconnection time for DER
11 systems, consistent with the goals of Hawai’i policymakers and regulators to integrate
12 renewable distributed energy resources further.²⁵

13 **Q. What other PIMs does Liberty propose?**

14 A. Liberty additionally proposed one Reporting PIM where the Company continuously
15 collects and reports relevant data. That PIM is an E.V. Reporting PIM that tracks the
16 percentage of total E.V. charging during off-peak hours. Generally, a reporting metric
17 helps provide data and insights into areas of customer interest while enhancing
18 transparency and accountability. In addition, it can provide the necessary background

²² <https://ripuc.ri.gov/sites/g/files/xkgbur841/files/eventsactions/docket/3628-NGrid-Annual-SQ-2019-%285-1-2020%29.pdf>

²³ Synapse Energy Economics, *Utility Performance Incentive Mechanisms – A Handbook* at p. 85.

²⁴<https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7B40B68A75-0000-C433-969F-7B373B38C8B7%7D&documentTitle=202011-167932-02t>

²⁵ <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A21E27B52242H02093>

1 information that may inform future rulemaking and proceedings, which are common
2 in jurisdictions in the early stages of implementing PBR or PIMs.

3 **IV. CONCLUSION**

4 **Q. Please provide your concluding comments concerning Liberty's PBR Proposal.**

5 A. Liberty's proposed multiyear rate plan and performance incentive mechanisms are in
6 the regulatory mainstream, generally accepted by industry analysts and participants,
7 and provide a reasonable approach to be applied in New Hampshire.

8 As indicated earlier, in the U.S., the stair-step approach to MYRPs is applied more
9 often than I-X methodologies. This approach provides transparency concerning utility
10 capital and O&M forecasts. Liberty's proposed earnings-sharing mechanism is
11 appropriately symmetric in that it provides for sharing in case of both under- and
12 over-earnings, with sharing percentages skewed to the benefit of customers. Finally,
13 Liberty's proposal incentivizes the utility to improve cost efficiencies when combined
14 with a 100 basis point deadband (+/- 50 basis points). It avoids the true-up approach
15 associated with formula rates and a cost-plus mindset.

16 Liberty's Reliability PIM has, in part, taken its design from the Settlement Agreement
17 approved by the Commission, which indicates that PBR aims at "rewarding utility
18 shareholders for the achievement of performance metric benchmarks and penalizing
19 them for failing to achieve such benchmarks."²⁶ Thus, it rewards Liberty for attaining

²⁶ State of New Hampshire Public Utilities Commission Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities, Docket No. DE 19-064, Settlement Agreement at p. 6

1 a level of reliability that exceeds most of its peer panel but penalizes it if it ranks low
2 relative to its peer panel. That peer panel consists of utilities located in the New
3 England region that putatively face similar issues regarding reliability, particularly
4 the effects of vegetation on it. In addition, there may be a slight time lag under its
5 current design relative to the other PIMs because of data availability. This PIM
6 appears consistent with the Settlement Agreement approved by the NHPUC that
7 included directives for designing Liberty's PBR.

8 Liberty's TOU PIM aims to provide incentives to enhance customer participation in
9 its newly developed TOU rate offering. The general experience with opt-in time-
10 varying rates is that customers adopt such rates slowly. For example, Arizona utilities
11 have achieved a 50% participation rate in their current TOU rate, but that has
12 occurred over a decade and after an initial TOU offering. Further, customers are
13 cautious due to a lack of familiarity with such rates. Since such participation rates are
14 initially relatively low, Liberty has reasonably chosen a pattern of participation rates
15 to base their PIM on, which is in keeping with the experience of utilities offering opt-
16 in TOU rates.

17 Liberty's Interconnect PIM, as noted above, has been adopted in DC and Hawai'i. It
18 has only a reward since it appears that Liberty is already achieving what it requires in
19 this area. Achieving this PIM should enhance the process of developing more
20 renewable resources in its service territory and is consistent with New Hampshire's
21 goals. As such, it appears reasonable.

1 The EV Reporting PIM is costless to Liberty's customers and will provide
2 information on this technology's penetration. In addition, that will provide a helpful
3 basis for public discussion regarding EV's future in Liberty's service territory. As
4 such, it seems approval-worthy.

5 **Q. Does this conclude your testimony?**

6 **A. Yes.**