STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 18-1633-PET

Petition of Green Mountain Power for approval of)
a multi-year regulation plan pursuant to 30 V.S.A.)
§§ 209, 218, and 218d)

PREFILED REBUTTAL TESTIMONY OF
JAMES M. COYNE
ON BEHALF OF GREEN MOUNTAIN POWER

February 4, 2019

SUMMARY OF TESTIMONY

Mr. Coyne reviews the testimony of Mr. J. Riley Allen on behalf of the Vermont Department of Public Service ("DPS" or the "Department") who has proposed changes to the proposed Multi-Year Regulation Plan ("MYRP" or the "Plan") submitted by Green Mountain Power ("GMP" or the "Company"). Mr. Coyne testifies that the Department's proposal that GMP's rates be set using an "I-X" formula, the proposal that the Commission reinstitute GMP's previous ROE Adjustor formula that adjusts ROE by 50% of change in 10-Year Treasury notes, and proposed modifications to the sharing bands of GMP's Earnings Sharing Adjustor are not appropriate and should not be approved.

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I. INTRODUCTION

Q1. Please state your name, affiliation, and business address.

A1. My name is James M. Coyne, and I am employed by Concentric Energy Advisors, Inc. ("Concentric") as a Senior Vice President. My business address is 293 Boston Post Road West, Suite 500, Marlborough, MA 01752.

Q2. Did you submit Direct Testimony in this proceeding?

A2. Yes, I submitted Direct Testimony on behalf of Green Mountain Power in this proceeding before the Vermont Public Utilities Commission ("PUC" or the "Commission").

Q3. What is the purpose of your Rebuttal Testimony?

A3. The purpose of my Rebuttal Testimony is to respond to Mr. J. Riley Allen on behalf of DPS who has proposed a series of modifications to GMP's proposed Multi-Year Regulation Plan. Specifically, I respond to Mr. J. Riley Allen's proposal to establish an "I-X" formula regulation plan for GMP, including an analysis of Mr. Allen's proposed I and X factors. I also respond to Mr. Allen's proposal to change the earnings sharing bands of GMP's earnings sharing mechanism to shift more downside risk to GMP, as well as his proposal to modify GMP's proposed ROE adjustment mechanism to rely solely on changes in the 10-Year Treasury.

Q4. How is the remainder of your Rebuttal Testimony organized?

A4. The remainder of my Rebuttal Testimony is organized as follows. Section II provides background on regulation plans in Vermont and GMP's proposed Plan. Section III presents an overview of incentive regulation plans generally and how I-X plans compare to multi-year regulation plans. Section IV contains my specific rebuttal to the proposals put forth by DPS witness J. Riley Allen, with respect to his proposals for an I-X formula for base rates, and his recommended changes to the proposed ROE adjustment formula and the Earnings Sharing Adjustment Mechanism ("ESAM"). Section V provides a summary of my conclusions and recommendations.

II. BACKGROUND

Q5. Please describe the Vermont statutory criteria for regulation plans (30 V.S.A. Section 218d).

A5. In recognition of the limitations of the traditional cost of service regulatory model to adequately incent modernization and efficiency or offer the requisite flexibility to develop innovative services for customers, the Vermont state legislature enacted a statute in 2003 that allowed the Public Utility Commission to approve regulatory plans other than traditional cost of service regulation. The statute (30 V.S.A. Section 218d) provided that such regulatory plans ("Reg Plan" or "Reg Plans") may be approved if all the following criteria were met:

> (1) establish a system of regulation in which such companies have clear incentives to provide least cost energy service to their customers;

(2) provide just and reasonable rates for service to all classes of customers;

(3) deliver safe and reliable service;

(4) offer incentives for innovations and improved performance that advance state energy policy such as increasing reliance on Vermont-based renewable energy and decreasing the extent to which the financial success of distribution utilities between rate cases is linked to increased sales to end use customers and may be threatened by decreases in those sales;

(5) promote improved quality of service, reliability, and service choices;

(6) encourage innovation in the provision of service;

(7) establish a reasonably balanced system of risks and rewards that encourages the company to operate as efficiently as possible using sound management practices; and

(8) provide a reasonable opportunity, under sound and economical management, to earn a fair rate of return, provided such opportunity must be consistent with flexible design of alternative regulation and with the inclusion of effective financial incentives in such alternatives.

The statute also provided for earnings sharing agreements and acknowledged that any approved Reg Plan may depart substantively from traditional rate-making procedures, standards, and mechanisms, including substantive changes to rate base-rate of return rate setting, so long as the Commission were to find that the plan promoted the public good, was in accordance with generally accepted accounting standards, and preserved the availability of equity and debt capital to the utility on favorable terms and conditions.

Q6. What is Vermont's experience with Reg Plans?

A6. The Vermont utilities began to file Reg Plans in the fall of 2005 and have generally been operating under a series of intermittent Reg Plans since 2006. Generally, the plans approved by Vermont regulators have included a blend of traditional cost of service principles,

separate fuel/power supply adjustors, and adjustments to ROE and earnings sharing mechanisms.

CVPS operated under a Reg Plan from 2008–2013. The plan had an I-X mechanism for all non-power costs and included a capital expense adder. The escalation of non-power costs was based on inflation (CPI for the Northeast region) less a productivity factor of 1%. The plan provided for a fixed ROE over its term (that was lowered during the term of the plan), an asymmetrical earnings sharing mechanism ("ESM"), a power supply adjustment clause, a recovery mechanism for exogenous factors outside the control of the utility, and adders for capital initiatives. CVPS was acquired by GMP in 2012.

GMP operated under a Reg Plan from 2006–2013, and then again from 2015–2017, and now operates under an Interim Plan for the period up to the inception of GMP's newly-proposed Plan, proposed to be October 1, 2019. The early plans provided a framework for the later plans, incorporating regular rate adjustments for annual base rate filings, power supply adjustment mechanisms, annual earnings sharing mechanisms, caps on non-power costs, a ROE adjustor to reflect 50% of the change in the 10-Year Treasury note, and overall caps on base rates, with factors for exogenous events and significant capital initiatives. Later forms of GMP's Reg Plans incorporated an annual base rate adjustment (that decoupled revenue from sales) and a merger savings adjustor to account for savings from the merger with CVPS.

Though GMP and CVPS have historically incorporated limited elements of an I-X formula into their regulation plans in capping O&M costs, neither have used an I-X formula

to set base rates under their respective Reg Plans. The CVPS plan had many common elements to the DPS proposal here, but capital costs were excluded. As is discussed more in the testimony of Mr. Ryan, that mechanism was challenging to implement and ultimately led to several modifications of the Plan, including modification to the structure of the formula and carveouts from the formula.

Q7. Please describe the major components of the GMP MYRP.

A7. GMP's proposed Plan builds on portions of the Company's former plans but moves substantially beyond prior plans by locking a large component of expenses over the three-year term of the Plan (including all capital and non-power costs) and moving to a fully decoupled framework through its retail revenue adjustor. Mr. Ryan describes in his rebuttal testimony the changes that GMP is proposing to address comments presented by other parties in this proceeding. For convenience I have summarized the key elements of GMP's Revised Plan below:

- Capital expenditures, all non-power costs, depreciation, and certain taxes are fully-locked in for each year of the Plan, with limited exceptions for unforeseen strategic investments and customer-focused capital driven by new initiatives.
- As part of the non-power cost lock, Base O&M costs are fully locked in for each year of the Plan (Years 2 and 3 are escalated by inflation), subject to a merger savings O&M platform that will be flowed through entirely to ratepayers in 2021 and 2022 and shared 50% with ratepayers in 2020.

- Power Supply Adjustor ("PSA") that provides for recovery of forecast energy costs, including capacity, RECs, ancillary services, and transmission O&M, with forecasts refreshed annually. GMP retains 10% of differences between forecast and actual energy costs outside a dead band of plus or minus $150,000 per quarter.
- Full revenue decoupling, which is accomplished through a Retail Revenue Adjustor that trues up actual revenue to forecast revenue at quarterly intervals during the year, based on each year's refreshed annual forecast.
- Rate Smoothing Adjustor which will use regulatory asset/liability accounts to create a smoother rate trajectory so that the projected annual rate change would be as uniform as possible. Rates in Years 2 and 3 will only change based on any changes in the items in the Plan that are forecast and refreshed annually.
- The Plan continues the exogenous adjustor which is primarily focused on storm recovery, helping to alleviate accumulated unrecovered storm costs and provide a storm cost reserve, returning any over recoveries to customers. This will include collecting $8 million annually to pay for existing stacked storm costs plus a quarterly collection system for any major storm costs that occur during the year. GMP will absorb each year the first $1.2 million of major storm costs before pursuing recovery from customers.
- Emerald Ash Borer ("EAB") Adjustor to cover costs of ongoing assessment and ash tree removal from GMP's rights-of-way to control EAB infestation, which causes

rapid decline and death to ash trees. GMP will collect $1.2 million annually to cover EAB costs.

- The cost of equity will be established in this proceeding for the inception of the Plan and will be adjusted each successive year under the Plan by an Annual Adjustment Mechanism.
- The Plan also includes Performance Metrics which track the company's performance in certain categories.
- The Plan includes an Earnings Sharing Mechanism, which includes a dead band of 50 basis points above or below the authorized ROE, and a symmetrical 50/50 sharing of over or under earnings beyond the dead band between GMP and its customers.
- Finally, the Plan continues GMP's Innovative Pilot Program to deliver customer-facing transformative energy projects that decrease fossil-fuel consumption and greenhouse-gas emissions through strategic electrification, requiring PUC approval for any innovative pilot programs that would result in more than $5 million in capital rate base additions.

III. INCENTIVE REGULATION PLANS

Q8. Can you please start by describing the purpose of Incentive Regulation Plans?

A8. Incentive regulation is primarily intended to provide the utility with an incentive and goals to operate more efficiently, without diminishing the quality of service for customers. It achieves this objective by weakening the link between costs and rates for the term of the

plan and by measuring service quality. Incentive plans generally provide an opportunity for the utility to retain improvements in its ROE until rates are rebased at the end of the plan. Prices during the first year of an incentive plan are typically based on cost of service principles and adjusted in each subsequent year based on the specific plan methodology. These methodologies typically distinguish between factors that are reasonably within the control of the utility and exogenous factors that are beyond the utility's control. Incentive plans generally include various features that allocate the efficiency gains between shareholders and customers, either upfront in the rates, throughout the plan through an earnings sharing mechanism, or after the plan is completed through an efficiency carryover mechanism ("ECM").

A principle goal of incentive regulation plans is to drive cost efficiencies. A link between service quality and incentive regulation is thought to be necessary to preclude a utility from pursuit of efficiency gains to the detriment of service quality. Most incentive plans provide that the utility maintain satisfactory service quality indicators.

Incentive regulation plans are put in place to allow the regulated entity greater incentives to operate more efficiently than under a traditional cost of service framework, as it rewards the utility with profit for greater efficiencies. Incentive plans should demonstrate superiority to current regulation in advancing safe, reliable, and least-cost service, as well as reduced administrative burden of regulation. A well-designed Incentive Regulation Plan should result in greater benefits to customers than would be present under current regulation

and should correspondingly provide the utility with the opportunity to earn greater rewards in exchange for the assumption of greater risk.[1]

Q9. Please describe the difference between a multi-year regulation plan as was proposed by GMP and an I-X plan as proposed by the DPS.

A9. Both GMP's proposed MYRP and the I-X formula plan proposed by Mr. Allen are forms of incentive regulation. There are, however, several differences between a multi-year regulation plan, which typically follows a "building block" approach and is based on a forward-looking forecast, and traditional I-X formulas. Each model is comprised of several defining elements (e.g., the term of the plan, the formula for adjusting rates, treatment of factors beyond the utility's control, an ESM, etc.) and these elements require a determination of parameters that reflect utility-specific facts and circumstances (e.g., the establishment of "I" and "X" if an I-X approach is adopted). There are also variations in Reg Plans that reflect differences between the treatment of CapEx and O&M. Achievement of policy and other objectives may also be part of it, especially with more mature programs. Even though Reg Plans typically break the direct link between costs and rates, periodic traditional cost of service reviews provide a reasonableness check for rebasing subsequent plans, as GMP has proposed to do.

MYRPs use cost of service to determine the revenue requirements in future plan years generally based on a forecast of the revenue requirement for each year of the Plan at

[1] MA D.P.U. 96-50 (Phase I) at 242–243 [*paraphrased*].

the onset. With the MYRP approach, it is incumbent on GMP to reflect efficiency in its forecast and then assume the risk for meeting these forecasts. Efficiencies are realized as the utility meets its budgeted forecast to earn its allowed return and through the reduction of traditional rate proceedings. MYRPs may be better suited if there are certain strategic programs, investments, or requirements during the plan period that do not fit well into an I-X framework. I-X plans are better suited for utilities that operate in a relatively steady state without large capital or operating expense variations, and tend to be less appropriate during periods of strategic transformation and innovation, or where specific company circumstances limit potential for meaningful incentives, such as the case with GMP, which currently operates under a separate Merger Savings Agreement through the fall of 2022. The question of which of the various types of Reg Plans are appropriate for GMP requires an assessment of its particular facts and circumstances.

Q10. What is represented by X in the I-X plan?

A10. The X factor represents industry productivity growth; that is, how the industry has performed relative to the economy for all capital and expenses. Typically, we rely on Total Factor Productivity ("TFP") studies to inform our derivation of X. In this analysis, TFP = Total Output/Total Input, and is most often expressed as the trend in productivity, (trendProductivity = trend Outputs – trend Inputs), where total output is the units produced (typically customers or electricity demand for an electric utility) and total input consists of all resources consumed in producing output, i.e. labor, capital, and materials. Productivity gains are measured as an index of TFP, which as indicated above, is computed by

subtracting the percent change in total input from the percent change in total output. I-X plans incent firms to behave more efficiently through a profit motive. The I and X factors are thought to reflect growth in costs that the company should have experienced during the period as an average-performing utility. If its costs are lower than the formula would suggest, the utility would be rewarded with profit and vice versa.

Q11. What are the limitations of an I-X approach?

A11. The formulation of X is complicated and an improperly specified X factor may impede the utility's opportunity to earn a fair return or over-reward the utility. Further, there are often items that are regulated outside of a traditional I-X plan, such as strategic capital initiatives, power supply costs, exogenous costs, deferral account true ups, etc. that reduce the ability of the remaining costs subject to the cap to meaningfully impact overall performance efficiency.

Q12. Please describe recent national and regional trends in electric utility regulation plans.

A12. My observation is that I-X plans have evolved into more customized, building block-type rate plans in the U.S. for several reasons. First, recently approved I-X plans include very low to negative adjustments for X. The primary reason for this is that the derivation of X is a function of output and input. If output (customers or load growth) is shrinking or flat, this puts direct pressure on the X factor. This is exacerbated by the current environment where the industry is deploying increasing capital to replace equipment or for system hardening, safety, and reliability initiatives that do not translate to increased outputs in an environment

of flat to declining load growth. Accordingly, productivity will reflect the increased cost input relative to output, making X very low or negative. If X is negative, the I-X formula would function to add this amount on top of any inflation-based changes. Secondly, capital costs often don't fit well within the constructs of an I-X plan, and capital tracking mechanisms are necessary to ensure that costs associated with important capital programs are recovered. The more capital (or any other category of expenses) that is outside the plan, the less potential there is to drive efficiencies within the I-X plan. Though I-X plans work reasonably well in steady state circumstances, given the current significant transformations under way in the electric sector, and flat or declining load growth, recently approved incentive plans are evolving toward building block forecasts rather than the more general approach of increasing rates by I-X. This is also true internationally where performance-based plans have been adopted (e.g. the U.K., Australia, and New Zealand). An exception to this trend is Canada, where full or partial I-X plans have been adopted to some measure in Ontario, Alberta, B.C., and Quebec. But even these plans have been customized for capital and factors beyond the utility's control.

Q13. What do you conclude on the appropriateness of an I-X Plan for GMP at this time?

A13. As discussed further below, taking GMP's specific facts and circumstances into account, including the rapid changes in the electric sector nationally and in Vermont, and GMP's existing regulatory obligations under its Merger Savings Agreement which already require GMP to pass operational savings back to customers, the I-X approach would not be a suitable regulatory model at this time.

IV. SPECIFIC REBUTTAL TO J. RILEY ALLEN

Q14. Please summarize Mr. Allen's proposed modifications to GMP's Regulation Plan.

A14. The most significant modification Mr. Allen proposes is an Attrition Relief Mechanism ("ARM") or an I-X mechanism to adjust GMP's base revenue requirement. He proposes that "I" should be based on GDP-PI and that "X" should be set at 0.86, of which he attributes approximately 0.66 to represent additional productivity gains over and above those inferred in the Merger Savings Agreement. It appears based on portions of Mr. Allen's testimony and discovery responses that his proposed X factor might be subject to annual adjustments to account for anticipated changes in GMP's cost of service, but the method for such adjustments is unclear and would be complex.

Mr. Allen also revises the Earnings Sharing Adjustor such that GMP absorbs more of the downside earnings by asymmetrically adjusting GMP's first sharing band down to 100 basis points ("bps"), while leaving the first sharing band for the upside at 50 bps. He suggests 50/50 sharing with customers between 100 and 200 bps on the downside and between 50 and 100 bps on the upside. Beyond that second band, ratepayers and shareholders would be covered such that GMP's share of the earnings would never exceed 75 basis points above the targeted ROE on the upside and never below 150 basis points on the downside, i.e. anything beyond the second sharing band flows to ratepayers.

Mr. Allen has proposed that GMP return to its previous formula for adjusting ROE, which was based on 50% of the change in 10-Year Treasury notes.

Mr. Allen, Ms. Fischer, and Mr. McNamara have proposed to revise the efficiency band of the Power Supply Adjustor from a symmetric band of plus or minus $150,000, to an asymmetrical dead band that reduces the lower threshold to -$307,000, shifting greater risk to GMP. I respond to Mr. Allen's I-X proposal, and proposed modifications to the ROE Adjustor and ESAM adjustments below. I understand that GMP witness Mr. Douglas Smith addresses the Department's proposed PSA changes in his testimony.

Q15. Are there aspects of Mr. Allen's testimony where you are in agreement? If so, please list the areas of agreement.

A15. Though I generally agree with the regulatory principles that Mr. Allen has cited in his testimony, and there were several aspects of GMP's Plan that Mr. Allen supported without revision,[2] I find that his proposed modifications are not appropriate at this time given GMP's other existing regulatory requirements and that they shift undue risk to GMP with no corresponding opportunity for gain.

Q16. Please summarize the primary issues you have with Mr. Allen's proposal that you address in this section.

A16. Mr. Allen's comprehensive I-X approach is ill-suited for GMP at this time for the primary reason that GMP is already subject to a Merger Savings Agreement, which requires it to pass on any savings that it realizes on Platform O&M costs in accordance with pre-determined sharing percentages (50% in 2020 and 100% in 2021 and 2022). Because the

[2] Allen pf. at 18–24.

traditional I-X philosophy is premised on the utility's ability to retain economic gains as a primary incentive to drive efficiencies, and since GMP is obligated to pass on the vast majority of any gains to customers under its Merger Savings Agreement, the basic premise of incentive regulation is violated as GMP has no potential for retaining additional efficiencies gained during the Plan term. Mr. Allen's proposal is essentially a plan on top of a plan that allows GMP no opportunity to realize gains but requires it to assume significantly greater risk. Given GMP's existing commitments to pass along efficiencies to customers that coincides with the end of the proposed Plan period, this is not the correct time for an I-X plan for GMP.

Assuming for the sake of argument that one was to use an I-X methodology for setting rates (which I do not recommend in this case for the reasons stated above), there are several fundamental issues with Mr. Allen's specification of the I-X formula that would require correction. Those issues are listed in bullet form below and will be discussed in detail later in this section.

- Mr. Allen's proposes to use GDP-PI (an economy wide measure) as the measure of inflation but used a generic TFP factor for the industry for his X factor. When using a general economy inflation factor, the TFP should be accompanied by an adjustment factor to reflect differences in electric industry input prices and those for the general economy;
- Mr. Allen's derivation of the X factor places undue weight on the 2008-2014 period;

- Mr. Allen inappropriately focuses the X factor on GMP's history and not the average electric utility in the industry;
- The X factor he recommends far exceeds those in recently approved rate plans.
- Mr. Allen's use of a Total Factor Productivity study does not apply to GMP in its specific circumstances, as only a small portion of non-Base O&M costs would be subject to escalation with the I-X formula. As such, a partial factor productivity study should have been used;
- I take issue with Mr. Allen's proposal that GMP return to its prior ROE Adjustor, and that it "worked reasonably well in prior plans;"[3]
- Lastly, Mr. Allen's proposal for an asymmetric earnings sharing mechanism does not create a balanced set of incentives. The Company and customers should share benefits equally under the Plan to be fair and reasonable.

I will address each of the above issues in the following section of my Rebuttal Testimony.

A. Proposed I-X Plan is Redundant to GMP's Merger Savings Agreement

Q17. You state that Mr. Allen's I-X plan proposal is ill-suited in light of GMP's existing merger agreements. Please elaborate.

A17. Mr. Riley proposes an incentive plan for GMP at a time when GMP is already subject to a plan for passing on savings through its Merger Savings Agreement. Though GMP is

[3] Allen pf. at 34.

nearing the end of that agreement, it is still required to pass on all Base O&M[4] savings to customers at a rate of 50% for 2020 and 100% for 2021 and 2022, at a level which the Commission deemed "unprecedented in Vermont utility regulation" and reflected "the high degree of confidence the Petitioners have that these savings actually exist and will be attained, even without laying off any non-executive employees."[5] GMP has guaranteed to return $144 million to customers, but is also obligated to return any savings above this guaranteed level to customers in accordance with the terms of the agreement. Because of the structure of this agreement, GMP is essentially already subject to an incentive plan as it pertains to Base O&M, which by far comprises the majority of its O&M costs.

Q18. Why do you say that GMP Base O&M is already subject to a plan?

A18. GMP's guaranteed savings under the Merger Savings Agreement are determined essentially on an I-X approach for Base O&M costs. This is because Platform O&M costs are escalated based on inflation, and though X isn't set at a particular level, it can be inferred to be zero. Unlike traditional I-X plans, the Merger Savings Agreement requires GMP to pass actual savings achieved against this cost cap along to customers with up to $144 million in savings guaranteed over the life of the agreement. GMP is on target to exceed that guaranteed level. Mr. Allen's proposal seeks to layer another I-X on top of that already established by the Merger Savings Agreement. It is inappropriate to go back into the

[4] Case No. 7770, Final Order of June 15, 2012 ePUC Document No. 61848/16204, para. 209, where it defines Base O&M costs as excluding "costs related to Smart Grid and Advanced Meter Infrastructure, the Kingdom Community Wind Project, CVPS's acquisition of VMPD assets, and staffing reductions associated with the Docket 7496 MOU."
[5] Id., at 8.

agreement while it remains in effect several years down the road and require an even greater level of savings than the "unprecedented" level already guaranteed—all of which must be shared with customers at agreed upon levels. If you were to apply an I-X plan on top of the Merger Savings Agreement, the only appropriate recourse would be to exclude any Base O&M costs already subject to the Merger Savings Agreement from the I-X plan, as customers are already sharing in any savings in these areas for the entirety of the proposed Plan.

Q19. If Base O&M costs are carved out of the I-X plan as you suggest, what would be left to provide the additional productivity savings suggested by the Department?

A19. Very little. All parties have agreed that capital costs under either DPS's or GMP's proposed versions of the Plan will remain fixed, and if Base O&M costs are also carved out of the Plan, the only relevant costs subject to an I-X formula are non-Base O&M costs, which are very small. In discovery, Mr. Allen was asked to list the other areas of additional cost savings GMP may realize for customers. In the below excerpt from Mr. Allen's discovery responses, he gives examples of areas in which he believes savings can be achieved.

> PSD Response: To be clear, the O&M platform and associated commitment to customer savings is the result of the merger proceeding. The Department is seeking additional assurances that may drive further O&M savings relevant to the categories listed in the O&M platform or in areas beyond the categories of costs and accounts associated with the O&M platform**. As an example, the multi-year rate plan helped to foster efficiencies in operations that relate to regulatory oversight. Less staff time and effort related to support for rate cases may result in staff savings, a reduction in the cost of legal**

services, and an ability of the Company to focus attention on other savings or service opportunities…[6]

It is important to note that all of the examples Mr. Allen has given (i.e., regulatory oversight related to rate proceedings, support for rate cases, legal services and staff support of service opportunities) are categories of operations that are encompassed in GMP's Platform O&M and subject to the Merger Savings Agreement. Thus, GMP is already obligated to return any savings in these categories to customers under that agreement; the DPS proposal would just make tracking and reporting these savings more complex.

Q20. Please elaborate on how the I-X plan would add complexity. Isn't the point to come up with a simpler, more transparent regulation plan?

A20. Yes. That is the point, and both DPS and GMP agree that transparency and simplicity should be guiding principles in development of this Plan. However, Mr. Allen's proposal creates greater complexity with little to no benefit. Mr. Allen, himself, agrees that it would be difficult to isolate savings attributed to the Plan, assuming such savings were indeed possible—for example, his response to discovery request Q.GMP.1.9.d, where he states, "[i]t seems unlikely that GMP will be able to readily distinguish savings attributable to the merger from savings relative to the multi-year rate plan."[7] In his response, Mr. Allen does not consider that the Merger Savings Agreement requires a full accounting of the savings attributable to the Merger, compared to the original estimate of savings, returning to

[6] PSD Responses to GMP's First Set of Discovery at 9–10, Q.GMP.1-7.d.
[7] PSD Responses to GMP's First Set of Discovery at 9–10, Q.GMP.1-9.d.

ratepayers any deficiencies. GMP is required to calculate and identify savings attributable to the merger.

Q21. What is your conclusion on whether Mr. Allen's I-X plan will provide incentives to drive efficiencies?

A21. Mr. Allen proposes an incentive plan that is essentially all stick and no carrot—he sets an unrealistically high estimate of productivity (by overestimating the X factor as described elsewhere in my testimony) and then layers on another required level of savings beyond that already ordered by the Merger Savings Agreement. Any savings achieved over the next three years in Platform O&M are subject to the sharing provisions of the Merger Savings Agreement; one of the benefits of this Plan is that it coincides with the end of that obligation and will allow a full reset at that time. Since the majority of savings over the Plan term are already promised to customers, the additional level of savings required by application of an I-X formula allows essentially no benefit or incentive to flow to GMP for the majority of the Plan term. To enter into an I-X Reg Plan now would create confusion and complexity without any discernable benefit, given GMP's requirement to return all savings the last two years of this Plan period.

While there may be a time for a pure I-X revenue cap plan for GMP in future Reg Plan proceedings, GMP's current circumstances are uniquely influenced by its existing agreement with its customers relative to its acquisition of CVPS. Any meaningful savings realized from the proposed I-X plan would be required to be shared with customers in accordance with the Merger Savings Agreement. Carving out those costs, and the capital

costs which are already fixed, leave no meaningful costs upon which to apply I-X and extract efficiencies. Mr. Allen has proposed an incentive regulation plan that fails to include incentives.

B. Mr. Allen's I-X Formula is Improperly Specified

Q22. You indicated that there were several fundamental issues in Mr. Allen's specification of the I-X formula. If Mr. Allen were to correct those fundamental issues should the Commission approve an I-X plan for GMP?

A22. No. For the reasons outlined above, it would be inappropriate to apply an I-X incentive plan for GMP at this time. However, if the PUC were to consider such a plan, the proposal advanced by the Department has significant flaws, and its specification of X departs substantially from how the factor would typically be formulated (if the other problems with combining this approach with the Merger Savings Agreement noted above did not exist.) I have listed the flaws I have identified in the following subsections.

a. The Combination of GDP-PI and the TPF Selected is Inappropriate

Q23. You indicated that GDP-PI as a measure of inflation should be accompanied by an adjustment factor for use in an I-X revenue cap plan. Please explain.

A23. When an economy-wide measure of inflation, such as GDP-PI, is used rather than an industry measure of inflation, the X factor should reflect differences in productivity and inputs between the utility and the overall economy. When using an economy-wide measure of I, X should be calibrated for the difference in expected productivity growth between the

industry and the overall economy, and the difference in input price growth between the overall economy and the industry.[8] When using GDP-PI, the X factor is the sum of TFP and input price differentials. A recent TFP study has found that the economy TFP has exceeded the electric industry TFP, and that electric industry input prices have exceeded those of the U.S. economy, resulting in a negative adjustment. In the 2017 Eversource Energy PBR proceeding, X was calculated as -2.56 when considering differences between the economy and the industry, while TFP for the industry alone was -0.46, an adjustment to the X factor of -2.10.[9] It is not clear that Mr. Allen derived X in this way and I see no indication in the PEG 2017 TFP Study (that Mr. Allen relied upon) that the differential between the economy and the industry was considered in the derivation of X.[10] In addition, Mr. Allen's proposed formula does not consider customer growth in the derivation of X. By not reflecting customer growth he has inferred a consumer dividend equal to positive customer growth, further overstating his effective X factor.

[8] Christensen Associates, Testimony of Mark E. Metizen Ph. D, Performance Based Ratemaking Mechanisms o/b/o NSTAR Electric Company, Western Massachusetts Electric Company d/b/a Eversource Energy, D.P.U. 17-05, January 17, 2017 at 27, footnote 25.
[9] Id. at 53, Figure 5.
[10] *See* Exhibit PSD-JRA-2, State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities (July 2017) at B.14. The Study explains its Index Construction as follows: "Productivity growth was calculated for each sampled utility as the difference between the growth rates of output and input quantity trends. We used as a proxy for output growth the growth in the total number of retail customers served. In calculating input quantity trends, we broke down the applicable cost into those for distribution plant, general plant, labor, and material and service (M&S) inputs. The cost of labor was defined for this purpose as O&M salaries and wages and pensions and other benefits. The cost of M&S inputs was defined as applicable O&M expenses net of these labor costs. The growth of the multifactor input quantity index is a weighted average of the growth in quantity sub indexes for labor, materials and services, and power distribution plant."

b. Derivation of X is Improperly Specified

Q24. You state that Mr. Allen's X factor is improperly specified as it does not reflect the average utility and is too heavily weighted for the 2008–2014 period which already includes two years of efficiencies from the merger with CVPS in 2012. Can you elaborate?

A24. Yes. Mr. Allen arrives at the X factor for his proposed plan by weighting various averages of GMP's historical multi-factor productivity, all of which included 2008–2014. His calculation is reproduced below:

Table 1: Allen MFP Derivation[11]

Date Range	GMP MFP	Estimated Department Weighting	Proposed MFP Adjustment
1980 - 2014	0.82%	25.00%	0.205%
1996 - 2014	0.52%	25.00%	0.130%
2008 - 2014	1.05%	50.00%	0.525%
		Total	0.860%

There are several fundamental problems to this approach. First, Mr. Allen's use of GMP's Multifactor Productivity (MFP)[12] as opposed to that of the electric utility industry, is incorrect. As I indicated earlier in this testimony, the X factor in an I-X plan represents ***industry*** productivity growth—that is, how the industry has performed relative to the

[11] Allen pf. at 32.

[12] The terms "Multifactor Productivity," or "MFP" used by Mr. Allen are synonymous with the terms "Total Factor Productivity" or "TFP" that I have used in my Rebuttal, all of which refer to productivity in use of capital, labor, and materials. Mr. Allen relied on the State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities (July 2017), Table B-6 to derive his estimate of X, attached as ***Exhibit PSD-JRA-2*** to his testimony. In the referenced Report, the authors describe the multifactor productivity index on p. 3.3 as an index which, "typically considers productivity in use of capital, labor and materials."

economy for all capital and expenses. The industry factors for the corresponding time periods are shown below:

Table 2: Allen Highlighted MFP Results Including Full Sample Average MFP

Date Range	GMP MFP	Full Sample Average MFP	Difference
1980 - 2014	0.82%	0.45%	0.37%
1996 - 2014	0.52%	0.39%	0.13%
2008 - 2014	1.05%	0.22%	0.83%

By specifying the X factor based on GMP's own superior history, Mr. Allen is essentially punishing GMP for being more efficient than the industry and disproportionately depriving GMP of rewards to which it would be entitled in a properly specified I-X plan. This approach does not allow for a fair sharing of risks and benefits between the Company and customers, and in my opinion would not meet the criteria of Section 218d.

Q25. Please explain the concerns with Mr. Allen's weighting of the various date range averages?

A25. Mr. Allen's weighting of X factors in Table 1 is not logical or appropriate. He has used each of the time periods offered in the TFP Study, all of which are overlapping and cumulative, and applied the weights as shown in Table 1 such that the 2008–2014 time period was not only included in each cumulative average, but also given the most weight in Mr. Allen's average of the averages. The logical approach would have been to select one date range of the three. The impact of Mr. Allen's inappropriate use of GMP's MFP is amplified by the heavy weighting of the 2008–2014 average for GMP in his calculation, when GMP realized merger efficiencies beginning in 2012 through its acquisition of CVPS.

This is undoubtedly reflected in GMP's MFP data, and likely explains at least part of the performance jump in 2008–2014 relative to the industry. It bears repeating that those efficiencies are already being passed to customers through the Merger Savings Agreement and should not trigger a level of efficiencies that are higher still. This point is moot, however, since Mr. Allen's reliance on GMP's individual MFP is in error. In a proper I-X plan, covering capital and operating expenses, the electric utility industry productivity factor is the appropriate one. Given the rapid changes in the electric utility industry, the most relevant period is the most recent, 2008–2014. I see no benefit in incorporating older data. According to the TFP Study, the electric utility industry productivity has averaged 0.22% over the time period 2008–2014.

c. Productivity Factor is Unreasonably High

Q26. You indicate that Mr. Allen's productivity factor exceeds that which has recently been approved in I-X plans. What has been the derivation of X in recent regulation plan proceedings?

A26. The productivity factor that Mr. Allen selects is not only mis-specified as indicated above, it is far outside the range of X factors in recently approved North American I-X plans. Below are listed the X factor and stretch factor (which together can be considered to formulate a productivity estimate) for I-X rate plans since 2012. As the Table shows, estimates of productivity have been decreasing since 2012, and most recently estimates have been between 0.30% at the very highest to -1.56% on the low-end.

Table 3: Recent Productivity Factors in I-X Plans

Proceeding	X Factor (%)	Stretch Factor (%)	Year of Decision	Type of Utility
2012 Alberta - Generic PBR Proceeding	0.96%	0.2%	2012	Electric & Gas Distribution
2012 Ontario Renewed Regulatory Framework for Electricity Distributors	0.0%	0.0% - 0.6%	2012	Electric & Gas Distribution
2014 Ontario – Enbridge Gas Distribution Inc. 2014-2018 Rate Application	N/A	Building block approach approved with a 5-year rate plan	2014	Gas Distribution
2014 British Columbia – FBC Multi-Year Performance Based Ratemaking Plan for 2014-2018	0.93%	0.1%	2014	Electric Distribution
2014 British Columbia – FEI Multi-Year Performance Based Ratemaking Plan for 2014-2018	0.90%	0.2%	2014	Gas Distribution
2015 Ontario - Toronto Hydro-Electric System Limited, Electricity Distribution Rates for 2015 – 2019	0.0%	0.6%, and stretch factor will apply to the C-factor	2015	Electric Distribution
2016 Alberta - Generic PBR Proceeding	0.3%	None	2016	Electric & Gas Distribution
2017 MA - Eversource DPU 17-05	-1.56%	0.25% when inflation > 2%	2017	Electric Distribution
2018 Quebec - Hydro Quebec Distribution	0.3%	0.0%	2018	Electric Distribution
2018 Enbdrige Gas & Union Gas Distribution	0.0%	0.3%	2018	Gas Distribution

In addition to the above, I am aware of two rate plan proceedings that are currently awaiting decision. First, in Ontario for HydroOne transmission, the Company proposed a productivity factor and stretch factor of 0.0% (PSE Study indicated a negative X factor of 1.71%, but went on to propose an X factor of 0.0% consistent with a prior OEB Order). Second, in MA for Mass Electric and Nantucket Electric d/b/a National Grid, the Company proposed a productivity factor of -1.72% and a 0.40% consumer dividend when inflation is greater than 2%. Clearly, Mr. Allen's proposed X factor of + 0.86% for GMP does not reflect industry norms for current plans.

d. Total Factor Productivity is Not Applicable to GMP

Q27. Please discuss your concerns with Mr. Allen's use of a total factor productivity Study to derive X for GMP.

A27. Productivity studies should be targeted to the costs that would be subject to the I-X escalation. Total Factor Productivity studies measure the efficiency of a utility in converting all of its inputs (labor, capital, and materials) into outputs (customers serviced), whereas Partial Factor Productivity ("PFP") studies focus on a subset of these inputs (e.g., O&M costs).

Since GMP has proposed to fix capital costs for the rate period, which will be outside the Plan, and most O&M costs are subject to the Merger Savings Agreement and should be outside the Plan, only a small portion of O&M would be subject to the I-X base rate adjustment. Since the costs subject to the Plan would include only non-Platform O&M, it would not be appropriate to use a TFP Study as Mr. Allen has relied upon. In GMP's case it would be necessary to conduct a separate Partial Factor Productivity study, specific to non-Base O&M, to develop an appropriate X factor. These studies take time and require additional extensive analysis to develop a number that is properly supported and appropriately reflects the industry productivity relative to the specific costs that will be escalated by I-X.

C. Proposed Changes to ROE Adjustor Create Unnecessary Risk

Q28. Please describe the ROE Adjustor that Mr. Allen has proposed for GMP.

A28. Mr. Allen recommends that GMP return to its prior formula, which adjusted ROE by 50% of the annual change in the 10-Year Treasury note yield as measured during a short period during one month. His recommendation is prompted by concerns about transparency and verification issues that attend the use of forecast values, as well as accessibility to key forecast data. If I am interpreting his testimony correctly, he proposes to begin the adjustment for 2020 rates by applying 50% of the difference between the daily average of the 10-Year Treasury yield for December 2018 versus the daily average for either August 2019 or December 2019 (it appears from Mr. Allen's discovery response that details are evolving).[13] In each succeeding year, he would use the Treasury yield used in the prior year's calculation from which to calculate the change for the current year.

Q29. Do you have concerns regarding Mr. Allen's ROE Adjustor proposal?

A29. Yes. My primary concern is that utility capital costs do not always track closely with government Treasury yields, and at times bear little to no relationship at all. As we saw during the Great Recession in 2008, government bond yields were significantly impacted by federal monetary policy and a flight to quality as investors flocked to the safety of U.S. Treasuries, driving down yields to the lowest levels in recorded history. The problem was that those changes in government bond yields did not translate to lower capital costs for the

[13] PSD Responses to GMP's First Set of Discovery at 31–32, Q.GMP.1-21.e through Q.GMP.1-21.g.

utility. In fact, capital costs and risk premiums were rising. As a result, formulas tied entirely to government bond yields produced unduly low and non-tenable equity return estimates. I am not aware of any jurisdiction that continued use of the single factor ROE formula tied to government bond yields without modification during this period. Where jurisdictions have continued use of an automatic adjustment formula, a floor on government bond yields, or a measure of utility bond yields or utility credit spreads have been incorporated. This is an important addition which would provide for greater stability and robustness in ROE formulation to remain effective under a variety of market conditions.

Q30. Mr. Allen provided an analysis in discovery that showed that U.S. utility-authorized returns have changed by roughly half of that of Treasury yields from 1990–2018, which he claims is evidence that his formula provides an appropriate fit. Do you agree with this conclusion?

A30. No, I do not. Mr. Allen's response is reproduced below:

> Utility ROE yields tend to move much more slowly than movement in the Bond yields, which is why reliance on a fraction of the movement seems to work well. In 1990, the average ROE award was about 12.62. By the second quarter of 2018, the ROE award was about 9.51. The difference between the two was about 3.1 percent. From 1990 to 2018, (on corresponding quarters), the Treasure [*sic]* bills moved from 8.42 to 2.92, after reaching a low of 1.56 in the 3rd quarter of 2016. The simple difference is about 5.5%. On that basis it would seem that simply relying on 50% of the movement in 10-year treasury bills. [sic] If one took into account the lagging effect of rate cases, the fit seems even more appropriate. 10-Year Treasury Bonds were 2.24 in the 3rd quarter of 2017 (8.42-2.24 = 6.18 x 50% is 3.1 percent). [14]

[14] PSD Responses to GMP's First Set of Discovery at 31–32, Q.GMP.1-21.d.

Although I agree that broad averages support that utility ROEs generally reflect half the change in government bond yields, these broad averages cannot be applied in isolation without a factor that corrects for the idiosyncrasies that may occur in periods of economic distress or governmental intervention to lower or increase interest rates. During those periods, interest rates rise or fall while credit spreads and risk premiums move in opposite directions. As Mr. Allen's data suggests, 10-Year Treasury yields were as low as 1.56 percent in Q3 2016, 136 basis points below the low end of the full range he cited. If the ROE formula were to be applied in that month, the utility would have received an anomalous and unfair return. It is for this reason that there should be a second factor to correct for aberrations in the normal relationship between government bond yields and corporate capital costs. I believe the incorporation of a utility bond spread provides this correction and protects against idiosyncrasies in bond yield data. This approach is used by the Ontario regulator.

Q31. How do you respond to Mr. Allen's concerns over the availability of public data to calculate the ROE adjustment mechanism you proposed?

A31. Mr. Allen indicated the Department would be supportive of GMP's original proposal if GMP were to provide stakeholders with annual updates to data for purposes of calculating ROE adjustments, if there were a compelling reason to do so, and if such updates would allow transparent access to the data by any member of the public online.[15] The compelling

[15] PSD Responses to GMP's First Set of Discovery at 31, Q.GMP.1-21.b.

reason for adopting a formula that is not based exclusively on the 10-Year Treasury note is addressed above in my preceding discussion, and I believe there are several reasonable approaches for ensuring public accessibility to the relevant underlying data. Ontario publishes its annual ROE adjustment calculation online, including tabulating the source data it used for the calculation. I see no reason why the same couldn't be done here, either through the PUC website or in GMP's submission.

Q32. Have you made any changes to the ROE adjustment formula you proposed in your June 4, 2018 testimony?

A32. Yes. I have made small changes in my formula to better accommodate publicly available data. I also noted a small omission from the formula I proposed in my June 4, 2018 testimony (where I omitted the base credit spread between 30-Yr Treasuries and 30-Yr Utility A bonds from which to calculate the change), which I have corrected. My revised formula more closely mirrors the Ontario formula in that it develops a forecast of the 30-year Treasury by adding the 30- vs. 10-year term spread to a forecast of the 10-Year Treasury. This allows for a 3- and 12-month forecasting interval that was not available for the 30-year Treasury through Blue Chip. My revised formula is as follows:

$$ROE_t = ROE_{t-1} + \left[0.50\ x\ (BF_t - BF_{t-1}) + 0.50\ x \left(\sum_i t \frac{30\_UtA\_B_{i,1} - 30\_B_{i,1}}{i_t} - 30\_UtA\_Sprd_{t-1}\right)\right]$$

In this formula, 50% of the change in the 30-year Treasury bond yield is combined in equal weighting with 50% of the change in the utility credit spread to determine the adjustment to ROE. The starting (or base, also reflected as t-1) bond yield and credit spread, BF_{t-1} and $30\_UtA\_Sprd_{t-1}$, respectively, are determined by taking the daily average for each parameter for December 2018 to serve as the basis from which to adjust in the first year of the formula. The utility credit spread in year t is equal to the average daily spread during the calculation month (e.g., May), between A-rated Utility Bonds ($30\_UtA\_B_{i,1}$) and 30-year Government Bonds ($30\_B_{i,1}$). The 30-year bond forecast BF_t is computed as the average of the Blue Chip 10-Year Treasury forecast for 3 and 12 months out plus the term spread calculated as the average daily spread between 10- and 30-year Treasuries for the calculation month. Concentric used Blue Chip Financial Forecasts for the 3- and 12-month-out forecast for the 10-Year Treasury, and relied on the Bloomberg Fair Value Utility A-rated Bond Index (identified as series, "C03630Y" in the Bloomberg terminal) for the Utility 30-year A-rated bond yield. Concentric also relied on Bloomberg for the actual daily 10- and 30-year Treasury bond yields. Both Blue Chip Financial Forecasts and Bloomberg require a subscription.

If data availability is an issue, the Wall Street Journal publishes a monthly economic forecasting survey[16] that is available online and provides a forecast for the 10-Year Treasury in semi-annual intervals (June and December). The newspaper also publishes Corporate bond benchmarks that could be substituted for the utility-specific bond index, and daily

[16] https://www.wsj.com/graphics/econsurvey/

treasury yields of differing tenures are widely reported and available through several public sites.

D. Changes to Earnings Sharing Mechanism are Inappropriate

Q33. Please explain your concerns with Mr. Allen's proposal for an asymmetric earnings sharing mechanism as part of GMP's MYRP.

A33. The purpose of an ESM is to share earnings with customers and to provide an incentive for performance improvement. It is probable that the realized ROE will be higher or lower than the authorized ROE that was reflected in the calculation of rates. The more earnings upside there is for the Company under a Reg Plan, the more effective the plan is at incenting performance improvement. An ESM can have the potential to dampen the incentive to pursue efficiencies, and an asymmetrical ESM that limits upside gains or shifts more downside risk to the utility will have an even greater dampening effect. Oftentimes, embarking on long-term strategies to improve performance require the assumption of risk on the part of the utility. If utilities are expected to absorb more downside risk than opportunity for gain, the utility will be dis-incented to take on higher-risk projects with long term gains, discouraging innovation.

V. CONCLUSIONS & RECOMMENDATIONS

Q34. Please summarize your conclusions and recommendations.

A34. The Reg Plan proposed by GMP is a logical evolution of its prior regulatory plan and Merger Agreement. The DPS has proposed several changes to the Company's MYRP.

While the Company and the DPS share many common objectives for the Plan, some elements of the DPS proposal do not currently fit. In particular, the proposed revisions to GMP's Plan to include an I-X formula, revisions to ESAM adjustor, and revisions to the ROE Adjustor linked exclusively to changes in 10-Year Treasury notes are not appropriate and should not be approved.

Q35. Does this conclude your Rebuttal Testimony?

A35. Yes, it does