STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. _____

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

PREFILED TESTIMONY OF BRIAN OTLEY ON BEHALF OF GREEN MOUNTAIN POWER

June 4, 2018

Summary of Testimony

Mr. Otley provides an overview of how GMP's capital investments will be handled under the proposed Multi-Year Regulation Plan and describes how this capital methodology best serves customers' interests. He also describes Green Mountain Power's ("GMP") proposed performance measures to help ensure GMP's strong customer-focused results continue, and explains other important features of the proposed plan, including the Innovative Pilot and treatment of subscription-based, cloud technology expenses to best deliver service to customers.

TABLE OF CONTENTS

EXHIBIT LIST

PREFILED TESTIMONY OF BRIAN OTLEY ON BEHALF OF GREEN MOUNTAIN POWER

I. Introduction

Q1. Please state your name, address and occupation.

A1. My name is Brian Otley, and I am a Senior Vice President and the Chief Operating Officer for Green Mountain Power ("GMP") or ("Company").

Q2. Please describe your educational and business background.

A2. I have a BA degree from Dartmouth College. For the first 20 years of my career, I worked in the healthcare Information Technology ("IT") sector. I held numerous functional and executive leadership roles with several healthcare software and services companies. In 2008, I joined GMP as Leader of Information and Innovation. In this role, I was responsible for the IT infrastructure and capabilities of GMP, while also driving positive change into GMP's use of technology across all aspects of its operation and customer service. Beginning in April 2009, I led GMP's Smart Grid ("SG") activities, including participating in the successful eEnergy Vermont application to the U.S. Department of Energy (the "DOE") for Vermont's Smart Grid Incentive Grant ("SGIG") award. In February 2011, I became Vice President of Operations for GMP. In June 2012, I became Chief Information Officer for GMP, concurrent with the approval of the merger with Central Vermont Public Service (CVPS). In November 2013, I became Senior Vice President and Chief Operating Officer of GMP. In this role, I am responsible for all field and customer-related operating activities of the Company.

Q3. Have you previously testified before the Public Utility Commission ("Commission" or "PUC")?

A3. Yes. I filed testimony in Docket No. 7770 and in GMP's 2018 rate proceeding in Case No. 17-3112-INV. I also recently filed testimony in GMP's 2019 rate proceeding, Case No. 18-094-TF.

Q4. What is the purpose of your testimony in this case?

A4. I provide an overview of the capital investment element of the proposed Multi-Year Regulation Plan ("MYRP" or "Plan") and describe how this capital methodology best serves our customers' interests. I begin by outlining the methodology GMP proposes to use to set capital expenditures within the Plan and identify the level at which GMP proposes to set capital expenditures over the three-year rate period, and the specific, narrow exceptions GMP seeks to these set limits for innovation and strategic unforeseen opportunities to benefit customers. I then explain how the anticipated capital investment levels were developed and describe the specific capital investment plans for each GMP department. For context, I also compare the fixed capital expenditure approach proposed here to other possible methodologies for managing capital expenses in a multi-year context, including the methodology used in GMP's prior regulation plan.

My testimony concludes by discussing the type of performance metrics GMP proposes to track during the pendency of the plan. I also address several important components of the plan including maintaining our innovative pilot program for customers

and refining the treatment of subscription-based, cloud technology costs to best deliver service under the Plan.

II. Capital Investments During the Multi-Year Plan

Q5. Can you please explain what GMP seeks to accomplish on behalf of customers through capital investments during the term of the Plan?

A5. As discussed in detail in Mary Powell's testimony, the proposal for this multi-year plan comes at a critical juncture for our customers, as we are facing a period of significant transition in the energy sector. Navigating that change will require smart and strategic investments of capital to ensure that we can continue to deliver safe and reliable service to our customers now and in the future, while we also pursue the types of transformative energy projects and programs that are necessary keep the overall cost of service manageable in years to come.

We have made important progress on these issues in the past several years. We successfully merged two major utilities reducing costs and delivering significant operational savings for our customers. And through the expanding partnership with our customers, we are implementing the type of innovative, home-, business-, and community-based energy programs, like the Tesla Powerwall program, that are critical to the transformation of our energy systems. During this transformation, we strive to deliver the quality of service our customers expect while driving down the cost pressures we are seeing and continuing to accelerate the transformation of the energy delivery model from what it has been to what is now needs to be. We have also made significant strides in

improving, hardening and securing our grid infrastructure, through disciplined capital investment in under-performing circuits, which along with other efforts, have led to high reliability and customer satisfaction levels. We have accomplished this work while maintaining among the lowest retail rates of an investor-owned utility in New England.

But there is much more work to do to meet our customers' needs and promote the transformation that is required in energy delivery. We will continue to build on our past accomplishments during the term of this Plan, focusing on investments that enable delivery of cost-effective, clean, and highly reliable service for our customers, while also undertaking proactive energy transformation opportunities during a time when there are more electrons flowing bi-directionally across the grid than ever before. During this next three-year period, we see several areas of investments as key to meeting our commitment to customers. These include:

- Maintaining and developing low-cost, renewable energy generation resources within Vermont;
- Hardening and making more resilient the sub-transmission and distribution system that is the backbone of the energy transformation that is underway;
- Equipping our workforce with the tools and technologies to safely and effectively perform their work every day, while keeping our customers safe at the same time;
- Continuing to use automation and digitization within our operations to reduce costs and improve the quality of the services we deliver; and

- Identifying and piloting emerging energy technologies that can be integrated within our operations and customer programs to deliver better results and lower costs for our customers year-over-year.

We have developed our multi-year capital investment path during the three-year term of this Plan to accomplish these goals, considering what will be needed to deliver high-quality, reliable service to our customers while also continuing to promote the transformation of energy use and delivery in Vermont. We expect to accomplish these objectives while keeping overall costs as low as possible.

With feedback from the Department of Public Service ("DPS" or "Department") about our capital investment levels, GMP has proposed a pace of capital investment that balances our forecast of what will be required to provide our customers safe, reliable service, including advancing important strategic efforts around innovation for our customers. To achieve this challenging balance, investment in each fiscal year will be set at approximately $85 million, and GMP will be responsible for managing actual spending each year within the set limit. This will be challenging to achieve for customers given the age of the infrastructure in New England and the responsibility the Company has for managing energy from more than sixty separate generation plants on behalf of customers. As with other aspects of our cost of service, the capital investment limit set during the multi-year plan would be bookended on either side by a traditional rate case, which will allow for a full, detailed review of capital projects for those years. Specifically, this

multi-year capital investment request is built off a full, traditional cost of service rate review for the 2019 rate period and sets capital spending at a comparable level to 2019.

As discussed further below, the capital investment limits established in the plan would be subject to only two narrow exceptions. The first, limited exception addresses potential growth of our "New Initiatives" investments, which focus on important energy transformation projects. Energy transformation programs typically create new revenues to GMP from the participating customers, which are used to offset program costs while the program itself delivers a net benefit back to all other customers, as well. For example, with our new heat pump pilot with VSECU, participating customers will pay GMP for the heat pump, maintenance and installation costs, and all customers will benefit from the additional energy used by the heat pump (which will help us spread fixed costs across more kwh) as well as the peak management cost reductions we will capture by managing the operation of the heat pump during potential peak hours. We believe it is important to have a mechanism in the Plan to accommodate growth in these programs that may exceed our initial forecasts. Lacking this flexibility, we might have to artificially restrain participation in the programs during the term of the Plan because of the tight capital limits established at the outset. This short-term restriction on participation in such transformative energy programs would be detrimental to our customers in the long term, so the Plan includes a mechanism to ensure that we can continue to expand these programs to meet customer demand and provide value to all customers.

The Plan also contains a second exception allowing for Commission approval in the event of extraordinary, unforeseen circumstances that require unanticipated additional

capital expenditures to maintain safe, reliable service for our customers, or to take advantage of new strategic opportunities that would materially benefit customers and therefore justify revisiting the approved annual capital spend.

Q6. Can you further describe the level of capital investment that is necessary during the term of the Multi-Year Pan to meet customer needs and explain how these numbers were developed?

A6. Based on our evaluation of necessary investments for customers, we believe the overall capital spending across GMP departments in Fiscal Year ("FY") 2020 should be set at $86.5 million; for FY2021 and FY2022 investment levels would be set at $85 million per year, for a 3-year total of $256.5 million in plant additions. As outlined in **Exhibit-GMP-BO-1**, and Table 1 below, these overall amounts break down as follows across each department, with the anticipated capital spending in FY2019 provided for context:

Table 1.

Construction Summary by Cat	FY 2019 Fcst	FY 2020 Fcst	FY 2021 Fcst	FY 2022 Fcst
Install				
Information Technology	6,845,223	9,375,000	9,551,000	9,423,000
Distribution Lines Large Cap	7,861,736	9,500,000	9,500,000	9,500,000
Distribution Lines Line Extensions	4,480,867	4,500,000	4,500,000	4,500,000
Distribution Lines Small Cap	14,845,804	10,100,000	10,100,000	10,100,000
Distribution Substation	6,070,443	4,900,000	4,775,000	4,425,000
General Plant	401,537	****** included in Production *****		
Jt Ownership	1,466,364	2,000,000	2,000,000	2,000,000
Kingdom Community Wind	995,830	****** included in Production *****		
Meters	912,779	650,000	650,000	650,000
New Initiatives	5,129,795	5,000,000	5,000,000	5,000,000
Production	17,306,939	17,700,000	16,700,000	16,200,000

Property & Structures	329,413	1,500,000	1,400,000	1,400,000
Regulators and Capacitors	1,084,873	1,100,000	1,100,000	1,100,000
Transformers	3,607,634	4,500,000	4,550,000	4,600,000
Transmission Lines	4,625,839	7,100,000	8,524,000	8,852,000
Transmission Substations	7,146,630	5,575,000	4,150,000	4,250,000
Transportation	3,041,994	3,000,000	3,000,000	3,000,000
Wind Generation	245,854	****** *included in Production* *****		
Sub-Total Install	**86,399,555**	**86,500,000**	**85,500,000**	**85,000,000**

These proposed spending levels were established based on several factors to balance the level of investment we believe necessary to meet our obligations to our customers today and into the future with the goal of keeping overall costs as low as possible for customers. The approximately $85 million represents capital projects that will be added to rate base during each fiscal year and is generally consistent with the level of capital spending for FY2019. This level of capital spending is a significant reduction from recent prior year capital spending, which is the result of GMP completing several important capital programs on behalf of customers. This level of capital spending also responds to the DPS's feedback to lower the annual level of capital investments. We incorporated this feedback to present a capital budget that provides necessary investments, including continuing investments in the transformation of our energy delivery model. We do have concerns that any continued reduction of capital spending below these levels will have adverse impacts on customers, as it will defer work necessary to maintain a reliable system and stack cost pressures for customers into future periods.

Q7. You mentioned that the FY2019 number in Table 1, above, is a capital spending budget number. Can you explain how that compares to proposed annual capital levels proposed during the Multi-Year Plan?

A7. Yes. As noted above, this FY2019 number represents GMP's capital spending plan for FY2019, not the total plant additions we anticipate for FY2019. As indicated in the 2019 Rate Case, the total amount closed to plant during the 9-month 2019 rate period is approximately $52 million. Our expected plant closings for the full fiscal year 2019 is $78 million. This difference between the $78 million closed to plant and the $86.4 million in expected spending is the result of timing between when the spending occurs and when projects are closed to plant. Not all capital projects start construction, get completed and close to plant in the same fiscal year. Capital projects can span fiscal years because of the timing of when the capital project starts (i.e. toward the end of the fiscal year) or it is a long duration capital project which spans fiscal years. For example, if you have a capital project which starts in FY2020 and is completed and closed to plan in FY2021 you will have spending in FY2020 and FY2021 and the amount closed to plant in 2021 will be the combined spending amount. The capital spending levels for FY2020, FY2021, and FY2022 in Table 1 also represent the total amount GMP anticipates closing to plant in each of those fiscal years, so that spending and the amount closed to plant are expected to be essentially equivalent during the term of the plan.

Q8. How will GMP's commitment to cap overall capital investments be incorporated into the Company's annual base rate filings under the Plan?

A8. As discussed in Mr. Ryan's testimony, and as outlined in the Plan itself, Exhibit-GMP-ER-1, we are committing to close to plant no more than $256.5 million in overall capital projects over the three-year life of the plan. This three-year total number reflects our expectation to close $86.5 million in FY20, and $85 million in both FY21 and FY22, as reflected in Table 1. We are expressing the overall commitment as the sum of the three years because in any given year the capital spending and plant closings for that year will vary because of long duration projects, timing or other factors, including factors that may not be in our control (for example, a project expected to close in September 2021 may not actually close until a few days later, but in the next fiscal year, in October 2021 due to weather conditions that delay construction). For that reason, GMP is not proposing that individual variations from year-to-year within the three-year term of the Plan be precluded from recovery if they are more or less than the $85 million estimated for each fiscal year, so long as the overall amount closed to plant over the three-year term is not more than $256.5 million.

But for purposes of setting the cost of service for annual base rates for each year in the Plan, we will be incorporating the individual amounts identified above in Table 1 by fiscal year. This amount establishes a consistent number for rate base additions over the three years and provides certainty for customers on the amount of capital that will be included in rates each year. GMP will manage its capital spending each year to hit these individual annual amounts to the maximum extent possible, and in the event there are

variations in any year in the amount actually closed, those variations will be balanced out in other years so that the total amount closed to plant during the term of the Plan does not exceed the total cap of $256.5 million. Mr. Ryan also discusses how the proposed Earnings Sharing Mechanism provides protection for customers if there are any material variations in the amounts of capital closed to plant during any given year.

Q9. Can you further explain the methods of analysis that were used to develop the proposed capital investment levels?

A9. We developed the overall proposed level of capital investment based on two types of analysis that include both a bottom-up and top-down analysis of what is needed to safely and reliably deliver service. In the bottom-up approach, we asked our department leaders to identify the minimum levels of investment required, based upon known projects and programs, which will be needed to serve our customers effectively over the three-year term of the Plan. These departmental levels of investment do not artificially reduce capital budgets by deferring needed work, which ultimately would drive up costs for customers in later periods. Rather they are based on a realistic assessment of investment levels needed to maintain our current levels of performance, reliability, and customer service.

From the top-down perspective, we evaluated how varying levels of capital investment might impact overall rate pressures during the term of the plan, with a focus on setting the annual capital investment at a level that minimizes any potential rate pressure. The ~$85 million annual investment limit represents the balance of these two

approaches. Specifically, by setting capital investments equivalent to the annualized level proposed in the 2019 rate period, and by proposing to maintain that level of annual investment over the life of the plan, we can ensure that this component of our cost of service does not meaningfully contribute to rate pressure. While we believe this level of investment reasonably reflects what is needed to continue to provide safe, reliable, low-cost power to our customers, we do have some concern that this multi-year level could ultimately result in under-investment in some important areas, particularly given the rapidly changing nature of the electric sector and the increasing impacts of climate change-driven events on our T&D infrastructure. As discussed further below, the approach of establishing an overall capital investment level several years in advance of when the projects will be delivered is advantageous for customers from the perspective of managing rates. However, the approach does present some risks, including the risk that these early evaluations of capital investment levels cannot perfectly anticipate all the intervening events that may compel the need for increased spending in the outer years of the plan. That is the risk the Company bears in this proposed Plan, and we do not undertake that risk lightly.

Q10. How did each department develop its anticipated level of spending over the term of the plan, and how does that analysis relate to the specific projects that may be pursued under the plan?

A10. Each department engaged in a process to identify the specific projects or the types of projects that will be necessary over the term of the plan to best serve customers. In

general, the department-level spending estimates were built off the detailed known and measurable budget developed for the FY2019 rate period, presently before the PUC (expanded to a 12-month period) and were then informed by each department's understanding of upcoming necessary expenditures.

To maintain innovation in a changing energy landscape, capital planning horizons differ among GMP's capital departments. Some departments, including Generation and T+D Substations, maintain three- to five-year or more capital planning documents because of the nature of the longer planning cycles required for those capital investments. For those departments, these longer-term planning documents formed the basis for the capital investment analysis in this multi-year plan. Other departments, such as IT and Distribution Lines, plan on a shorter horizon due to the nature of the projects they deliver. These departments based their investment levels on specific projects and capital programs that are anticipated to be advanced during the term of the Plan. As a general rule, and as one would expect, there is greater certainty on specific individual projects in the first year of the plan, FY2020, while the anticipated spending levels for the later years are at more of a planning level. The point of this effort was not to artificially establish now the specific projects that will be implemented in each year, but rather to establish at a planning scale the level of investment we anticipate will be needed to meet our obligations to customers, based on our experience, prior investment levels, and, where available, specific anticipated projects. **Exhibit GMP-BO-1** provides a narrative description of the types of projects each department anticipates in each fiscal year of the plan, and as noted above, the level of detail varies by project and year.

Although some departments have identified specific anticipated projects, these narratives are intended to be representative of the types of project each department will pursue during the term of the plan. The Plan is not proposed to commence for another eighteen months, and will extend out three years from there, so it is neither possible nor desirable to have detailed known and measurable information on every individual project at this time.

Q11. Will GMP still engage in its annual capital planning and documentation process?

A11. Yes. During each year of the plan GMP will conduct its regular annual capital planning process, as described in detail in my testimony in Case No. 18-0974-TF. This will involve consideration of the broader strategic alignment of potential projects, and a detailed evaluation of which projects in each year will best serve our customers. In any given year, the specific projects pursued by our capital departments will be guided by the department's general capital planning philosophy, which are attached as **Exhibit GMP-BO-2**. The projects proposed by each department will be reviewed and approved by GMP's Capital Management Team on an annual basis, consistent with our standard capital management practice. The Capital Management Team will consolidate each department budget into a final budget, and ultimately will be responsible for managing each fiscal year capital budget within the overall capital investment level authorized in the Plan.

As part of this process, GMP will document each individual capital project in a capital folder that meets the documentation standard established in Exhibit 2 to the

Memorandum of Understanding ("MOU") between GMP and DPS in Case No. 17-3112-INV, which is attached here as **Exhibit GMP-BO-3**. That agreement established the parties' understanding of the level of documentation necessary to meet the known and measurable requirements for capital projects in a traditional cost of service rate case. The MOU also provided that "the documentation standards outlined in Exhibit 2 shall also apply in any future alternative or non-traditional rate cases from GMP unless or until a separate documentation standard is established by the Commission or by express agreement between the Department regarding documentation in such cases." Therefore, GMP will continue to apply this standard during the term of the Plan.

Q12. Can you explain the legal standard GMP understands applies to the approval of a multi-year capital plan in the context of this Regulation Plan?

A12. Yes. The Plan proposed here is offered under 30 V.S.A §218d, which establishes the criteria for approving regulation plans in Vermont. This statute contemplates developing more efficient methods of regulation, which while different from traditional rate making procedures in some respects, will still ensure just and reasonable rates for customers. The Commission has recognized that 218d authorizes it to adjust traditional rate making requirements in limited circumstances where it finds that alternative mechanisms "will promote the public good and support the required findings under [Section 218d(a)]." VPUC Order, *Petition of Green Mountain Power Corporation for approval of an Alternative Regulation Plan, pursuant to 30 V.S.A. s 218d*, Docket 8191 (August 25, 2014) at 20. These include, among other things, incentivizing least cost service,

delivering safe and reliable service, promoting improved service quality, encouraging innovation, and ensuring that the Plan results in just and reasonable rates.

The approach we are proposing here modifies traditional rate-making principles in some limited respects, given that it is not possible at the commencement of the Plan to have full known and measurable information for every potential individual capital expenditure that may be implemented during the three-year term of the plan. Instead, the Plan proposes an overall cap on capital investments during each year of the plan, equal to the level of spending currently proposed in a traditional rate case, which will be subject to full known and measurable review. The Plan then imposes on GMP the obligation to maintain the same detailed documentation for each capital project implemented during the three-year term of the Plan that would otherwise be required for known and measurable review, ensuring that documentation will be available for every project in the event it is reviewed. This proposed modification is therefore appropriately bounded in such a way to ensure compliance with the statutory criteria.

Q13. Is this proposal more stringent than prior proposals with respect to how capital is handled during the term of the Plan?

A13. Yes. Prior regulation plans included a specific process for approving regular annual increases in capital investments during the term of the plan, so the overall spending levels were allowed to increase. This proposed approach is more stringent because it caps capital expenditures over the term of the plan at a level equivalent to the capital investments authorized in the most recent traditional case (with only limited exceptions).

Q14. Can you please explain how else the Capital process proposed here furthers the goals expressed in Section 218d?

A14. Yes. For purposes of a regulation plan, it is appropriate to hold GMP to a known and approved spending cap during the period of the Plan while GMP continues to comply with its capital documentation obligations for each individual capital project, as contemplated in the MOU between DPS and GMP. This approach creates certainty for the PUC, rate stability for GMP customers, and ultimately ensures that rates are just and reasonable during the term of the Plan as required under Section 218d. In other words, even under traditional regulation, it would be appropriate and expected that, all else being equal, a utility would manage costs and continue capital expenditures without returning to the PUC for further approvals. In that context, the method proposed here is even more protective than might otherwise be the case under traditional regulation, where a utility might stay out of regulatory review for a decade or more while continuing its authorized annual capital expenditures. Here, the three-year time period of the regulation plan is short enough to set this methodology at the front end after a full cost of service review, and again review after the regulation plan expiration at the next cost of service filing how the Company has performed within the established framework. It should be noted that, to the extent that capital investments are set at approximately the same level as expected overall spending in FY 2019, the capital expenditures proposed here will limit rate impacts during the term of the plan. Mr. Ryan's testimony speaks further to how the proposed Plan addresses each of the specific statutory criteria under section 218d.

Q15. Are there other methodologies that could be used for setting capital investment levels during the term of the Plan?

A15. Yes, there are numerous other approaches that could be used and have been used in other states to address capital investment in the context of a multi-year plan, including among others, an annual review process to evaluate proposed capital expenditures before the next fiscal year, such as was employed in GMP's first regulation plan; formulaic methods of escalating capital investment during each year of the plan (for example, indexed to CPI); or specific capital trackers which automatically adjust rates to recover for actual amounts spent on capital projects. These other approaches generally result in increased capital recovery during the term of the plan, whereas our proposed approach is flat over the life of the Plan. Each of these methodologies have their own benefits and drawbacks, but on balance we believe the fixed methodology proposed in our plan is the best option for our customers.

As noted, GMP's prior regulation plan established an annual capital review process, which occurred as part of what were essentially "mini rate cases" each year. Under this approach, GMP filed its proposed overall cost of service for the coming fiscal year in June of each year. As part of that filing, GMP would identify the specific individual capital projects that would be pursued in the coming year. The Department then conducted a condensed, very intensive review of the proposed adjustments, including a project-by-project review of the proposed capital investment, and developed a recommendation for the final cost of service. As part of this process DPS and GMP

would negotiate the overall cost of service number, including which capital projects to include or remove from the coming rate year. This ultimately resulted in a stipulated recommendation that was presented to the PUC for approval. While this approach allowed for year-to-year adjustments in capital investment based on what was known at the time, the method ultimately caused frustration and questions about transparency by parties that were not close to the process. The timeline for conducting the annual reviews under this system was necessarily condensed, which created time pressures for all parties. At the same time, it did not substantially reduce the level of work needed to both prepare and review the annual information; it just required that this intensive work be done in a shorter time-period.

Q16. Why is GMP proposing a fixed capital approach in this Plan?

A16. The fixed capital proposal is based on our experience with the prior regulation plan, as well as feedback from DPS and parties in the Future of Regulation Plan docket, and consideration of other possible approaches evaluated during that proceeding. We understand other parties' feedback regarding some of the design elements of the prior plan and have developed the present proposal to address those concerns. We believe the fixed annual spending approach over three years, when bookended by traditional rate cases and coupled with continued clear documentation requirements for each individual capital project and specific performance criteria for overall service quality and reliability, addresses the major concerns associated with the prior regulation plan. The Plan provides a clear, efficient mechanism for regulatory review and oversight of proposed capital

investment. It also balances certainty in the overall spending level with an appropriate level of management judgment and flexibility on specific individual projects during the three-year term. We believe this approach will best serve our customers over the life of the plan.

Once set, the capital investment levels provide both GMP and our customers certainty on the level of capital to be invested over the term of the Plan. GMP will have a solid foundation for planning several years of coordinated capital expenditures, while our customers have assurances that capital expenditures will not go above the set levels. Furthermore, by setting the overall spending level, but not prescribing each individual capital project by year, the plan provides GMP the flexibility within each year of the Plan to develop and pursue the projects that will best meet our customers' needs (up to the annual cap).

Q17. Are there any downsides to the fixed capital approach in your view, and if so, can those be mitigated?

A17. Yes, there are some potential drawbacks to locking in the capital investment for each year as part of a multi-year plan, which are important to understand. We also believe there are reasonable mechanisms for addressing these potential downsides to ensure that this approach best serves our customers' interests.

At the most basic level, setting anticipated capital levels several years in advance of the period when spending will occur necessarily relies on greater forecasting of projects and estimates of the amount of capital that will be required to meet customers'

needs. Simply put, it is not possible to have the same level of certainty on the levels of capital spending that will be required to serve customers over a three-year period as would be the case if the Company were setting spending annually. While we have engaged in a detailed planning process at this stage to develop reasonable estimates of the expected capital needs, those estimates will not be perfect or exact. In any given year, it is possible that actual capital needs and expenditures will vary to some extent from the cap established in the Plan.

The potential for this type of discrepancy between the approved limit on capital investment and actual required expenditures could lead to various outcomes. Hypothetically, a utility faced with this type of disconnect might underspend on the actual capital required to meet customers' needs, simply to stay within the cap. This could result in reduced service quality or reliability measures for customers, and/or missing out on important strategic investments which would benefit customers in the long-run. This underspending, starving of capital, or missed opportunities on strategic investments could also drive up costs in later years for customers as needed work is deferred or opportunities missed. And to the extent that actual capital investment is below the approved cap, there is the potential to artificially increase earnings for the utility during that period. Alternatively, a utility might make the choice to spend capital at the actual levels necessary to meet customer needs at that time, regardless of the cap. That approach would result in unrecoverable expenditures above the cap, which would reduce the overall return on equity for the utility.

Q18. How is GMP mitigating these concerns through the Plan design?

A18. Given GMP's core commitment to its customers, we would not entertain an option that negatively impacts customer outcomes. But to address any potential concerns, our Plan includes several concrete mechanisms to ensure that our customer interests will always remain *the* core priority under this Plan. First, we are proposing that measurement of customer service quality and reliably standards under our Service Quality and Reliability Plan ("SQRP") be incorporated directly into the Plan. This important component provides a backstop to ensure that customer service and reliability continue to meet state standards, regardless of the capital limits. In addition, for some narrow performance metrics where GMP currently far exceeds the expected state SQRP standards, we are proposing limited financial mechanisms to incentivize these higher results, despite the cap on capital investments. These are discussed further below in Section III of my testimony. Second, as described further in Mr. Ryan's testimony the Plan includes an Earnings-Sharing Adjustment Mechanism ("ESAM") that provides additional overarching protection for customers. Under the ESAM, any significant variation in GMP's overall earnings will be shared with customers. Specifically, we have proposed that any over or under earnings beyond a +/- 50-basis point "dead band" will be shared equally between GMP and customers, up to a +/- 100 basis point sharing band. For any amounts above that sharing band the entire benefit flows to customers. As a result, should actual earnings exceed expected earnings within that framework, those earnings will be shared with customers.

These mechanisms, plus the limited life of this regulation plan, address the potential downsides of using a fixed capital approach. However, it is important to note

that while a fixed capital approach provides our customers certainty on the level of capital expenditures included in rates, that same certainty creates greater risk for GMP compared to other possible approaches. The capital investment limits in the Plan provide GMP a strong incentive to manage its capital investments efficiently to best serve its customers. But regardless of the caps, GMP has the obligation to provide safe and reliable service for its customers. In the event it is unable to do so within the limits set in the Plan, GMP will incur capital costs that it cannot recover in rates from customers. The Plan includes a limited relief mechanism to address extreme circumstances where truly unforeseeable events materially increase the level of capital required to meet customer needs. Absent these narrow circumstances, GMP will be required to expend capital it cannot recover under the Plan. This necessarily increases the relative risk of the Plan, compared to either a traditional rate case, where GMP has an opportunity to recover all just and reasonable costs incurred on behalf of customers, or to a multi-year plan, in which capital levels are established on a more regular annual basis.

Q19. You mentioned that there were two limited carve-outs to the proposed capital investment limits – one for New Initiative investments, and one for extraordinary, unforeseen circumstances. Can you explain the New Initiatives exception?

A19. Yes. As part of our energy transformation work over the past several years, we have developed a number of innovative, customer-facing programs that are elements of creating a modern energy system that is more home, business, and community-based – work that we refer to as our "New Initiatives." These programs include our Tesla

Powerwall 2.0 program and our Heat Pump programs, for example. New Initiative programs most often start as approved pilots under the Innovative Pilot Programs provision of our current regulation plan and which, as discussed further below, we are seeking to extend as part of this Plan. These are voluntary customer programs in which customers choose to participate. They may require some upfront capital investment on GMP's part for the purchase of equipment but are designed to ensure that the participating customers cover the full costs associated with their use once they sign up, and then as part of the overall design of the programs, also contribute new revenue that provides an overall net benefit for all of our customers.

These types of programs represent an important new paradigm in capital planning and investment for utilities, where we are partnering directly with our customers to advance important policy goals and keep overall costs of the system down for all customers. However, because the programs are voluntary, and depend on individual customer demand, forecasting the exact level of participation and costs associated with any specific program can be difficult. It is not the same as GMP making decisions over, for example, a single new large generation project, where we are in a position to directly control the scope and timing of costs, and individual customers do not decide whether to receive power from the facility. Instead, our New Initiatives capital costs are driven by the popularity of the program and the pace of adoption by our customers. As we have done in the past, we will forecast a certain, expected level of customer participation in our already established New Initiative programs, including those proposed to be included in rates as part of the 2019 Rate Case. Therefore, as indicated above and in **Exhibit-**

GMP-BO-1, our proposed capital investment level for each fiscal year is a base level of capital associated with these programs, forecasted from past experience. But we do not want this pre-set capital amount to restrict the adoption pace or implementation of current or future New Initiative programs that may experience accelerated customer demand. We believe it is critical for our energy transformation efforts, and for achieving Vermont's energy policy goals, that we promote and fulfill rapid expansion of these programs in accordance with customer demand, not restrict them through a pre-set capital limit.

To address this potential problem, we are proposing a mechanism to seek PUC approval for annual capital expenditures above the base $5 million included in each year of our capital plans for New Initiatives. We believe this mechanism can be implemented easily through an annual filing justifying specific amounts above the $5 million capital limit. During the term of the Plan it is likely that many of these programs may mature out of, or expand on, existing innovative pilot programs that we have already requested to include in rates and therefore there will be a clear process for the Commission to review and evaluate the underlying program as they evolve and expand (including becoming tariffed offerings). As indicated in the proposed Plan, any request for additional spending to support these programs would be filed in advance of the proposed spending. If, as we hope, some or all of these programs scale up during an existing pilot, or a tariff offering, GMP would then present the data, information, and supporting known and measurable information during its annual base rate forecast filing to justify anticipated expenditures in those programs beyond the total $5 million set amount.

Q20. Can you explain the limited exception for extraordinary, unforeseen circumstances that would justify departure from the established capital limits?

A20. Yes. As noted above, while we have made diligent efforts to develop reasonable, justified estimates for capital expenditures during the life of the Plan, it is impossible to anticipate all the potential events that could ultimately lead to material increase in capital investment above the established limits. Unforeseeable or unanticipated events outside of the utility's control can occur that require greater than expected investments to maintain obligations to customers. Similarly, unforeseen strategic opportunities may arise that would provide significant benefit to customers, and utilities under fixed capital plans should not be discouraged from pursuing these potential opportunities for customers.

While it is appropriate from a regulatory perspective to assign risk for foreseeable events or circumstances to the utility under such plans, it would be unreasonable to expect the utility to assume risk for events that are truly unforeseeable or which could not be anticipated. Indeed, a plan that has no relief mechanism for such circumstances would be too risky for a utility to consider on behalf of its customers, without a significant impact on its credit rating. As discussed further in Mr. Ryan's testimony, such a credit downgrade would negatively impact our customers by increasing debt and power contracting costs, which would increase our cost of service, and therefore customer rates.

In order to mitigate this unreasonable risk, our proposed plan allows GMP to petition the PUC for approval to spend above the authorized levels in the plan in limited circumstances – namely where unexpected events require capital expenditures that are materially above the authorized level, or where increased capital expenditures beyond the

cap are needed to pursue unforeseen strategic opportunities that would clearly benefit customers. In these unique and narrow circumstances, the burden would be on GMP to petition the PUC and prove that a departure from the established limits is material and warranted.

III. Innovation and Performance Metrics.

Q21. Can you please explain what Performance Metrics are?

A21. Performance Metrics refer to components of regulation plans that are designed to encourage utility performance in areas that benefit customers or advance certain identified public policy goals. Typically, these measurements focus on areas where traditional utility choices may not inherently align with the desired public policy outcome absent some further regulatory encouragement. For example, in other states that do not have a separate energy efficiency utility, performance metrics are often used to encourage utilities to implement demand-side management programs, which reduce electric sales and therefore utility revenue, but promote valued efficiency measures. Similarly, performance metrics are often used to incentivize improvements in service quality or reliability. These measures can be tied to specific utility incentives, such as an increase in allowed return on equity ("ROE") if particular outcomes are achieved, or may also be coupled with disincentives, such as ROE decreases or other financial penalties for failure to achieve certain established metrics.

Q22. What type of Performance Metrics, if any, is GMP proposing in the present Plan?

A22. We are proposing two sets of performance metrics in the Plan. The first set, consistent with past plans, sets forth clear metrics to measure our performance on issues that matter to our customers. Specifically, we are proposing to incorporate compliance with our PUC-approved SQRP into the Plan. This ensures that performance on these key service quality and reliability metrics will be tracked consistently during the term of the Plan, and the SQRP already imposes financial penalties if GMP fails to meet the established standards for any reason. In addition, as a new component of this Plan, for a limited number of customer service metrics, we are proposing small ROE adjustments if GMP far exceeds the State's minimum required performance level. In the context of the proposed capital plan, which caps overall capital investments over three years, we believe this limited financial mechanism is appropriate for encouraging GMP to continue its already high service quality and reliability performance, above and beyond the levels minimally required by the SQRP.

The second set of performance metrics are intended to introduce measurement of forward-looking performance elements that demonstrate innovation and proactive transformation of utility operations and services for customers. These measurements are comprised of metrics that involve innovations not yet tested in prior periods. For this category of metrics, we propose measuring performance over the term of the plan to establish baselines for performance in several categories. These baselines can be used to help design more specific performance incentives, but because these performance categories are so new, we propose to leave the design and implementation of any

potential incentive mechanisms to a future regulation plan. GMP has been performing at high levels for customers for a number of years. This type of regulatory framework and approach is a way to recognize this level of achievement for customers and to encourage it for many years to come.

Q23. Can you further describe how the SQRP-related measures will be incorporated into this Plan?

A23. Yes. As in prior plans, the Plan will require GMP to meet all minimum standards for customer service and reliability outlined in its current SQRP, which was approved by the PUC in 2014. The SQRP requires GMP to meet specific standards for the following categories of performance: (1) call answering, (2) billing, (3) meter reading, (4) work completion, (5) customer satisfaction, (6) worker safety, and (7) reliability. The SQRP includes Service Guarantees for customers based on these standards, which result in payments to individual customers in the event that these guarantees on service quality are not met. It also includes broader financial penalties for failure to meet certain standards. GMP's current SQRP was established shortly after the CVPS merger and increased the targets of almost all of the performance measures against which we report from what they had been for either company pre-merger. GMP's recent operating performance has met and exceeded all of these standards but incorporating compliance with the SQRP into the Plan will ensure that these basic state standards are maintained throughout the term of the Plan.

For some of the categories of customer service and reliability the Plan proposes limited financial incentives for significantly exceeding State standards. The purpose of these metrics is not to change the underlying state-established SQRP performance standard, but rather to encourage GMP to go above and beyond these levels of performance during the term of the Plan, even with the proposed cap on capital spending. In particular, we are proposing "stretch goals" in both the quarterly and annual customer satisfaction rate, the non-outage and outage call performance metrics, and the overall number of customer complaints level. The specific performance metrics for these five items are outlined in **Exhibit GMP-BO-4.** In the event that GMP's performance hits any one of these customer service stretch goals in any given year, the Plan would allow a limited increase of 5 basis points for achieving each individual goal, for a total potential 25 basis point adder to the allowed ROE for the following fiscal year.

Q24. What other metrics are you proposing to track as a part of this Plan?

A24. In addition to service quality and reliability metrics, we are also proposing to track a series of new metrics that align with state energy policy, and with our goals of reducing costs for our customers and creating a more modern grid that is home, business, and community-based. To accomplish these goals, we believe it is appropriate to track metrics across several related categories including, among others, our success in getting customers to adopt technology that reduces operational costs, our work to facilitate continued innovation and new service offerings, including third-party partnerships, our efforts to encourage aggressive peak management measures which reduce costs, and our

efforts to reduce carbon associated with our power portfolio. As outlined in **Exhibit GMP-BO-4,** these specific measurements will include (1) the percent of customers that have elected to receive paperless bills, pay through auto-draft, have on-line accounts, and have signed up for text alerts, (2) the total aggregate capacity of connected distributed energy resources ("DER") on our system, (3) the number of third-party installed DER resources per year, (4) the percent of load that can be safely and reliably islanded, and (5) the percentage of time GMP accurately forecasts peak events and dispatches peak management resources.

Tracking our performance on these specific metrics during the term of the Plan will help maintain focus on accomplishing our strategic goals and will help facilitate the type of change we believe is critical to keep costs low for our customers in future years. It will also develop a baseline of performance that can be used in future regulation plans to more specifically target incentives for further improvement in these and related areas. We welcome Department and Commission feedback, as well as the feedback of other parties, regarding these proposed measurement metrics during this process, because we believe this is an important tool for innovation and regulation plans going forward.

IV. Innovative Pilot Program

Q25. Please explain the innovative pilot program.

A25. For the last few years, GMP has been partnering with third parties to offer customers innovative programs like heat pumps and heat pump water heaters. These offerings are what our customers tell us they want – a transformative energy future that will reduce cost, reduce carbon, and make them more comfortable. Customer participation in these offerings has been steady, and we hope to accelerate that participation rate as part of our grid transformation objectives.

The innovative offerings are also necessary to satisfy Tier 3 of the Renewable Energy Standard ("RES"), which requires Vermont electric utilities to deliver customer-facing transformative energy projects that decrease fossil fuel consumption and greenhouse gas emissions. These offerings also advance the renewable energy and greenhouse gas reduction goals contemplated in Vermont's Comprehensive Energy Plan ("CEP").

The RES mandates are significant. They require us to deliver transformative energy projects representing 2 percent of our retail sales in 2017 and increasing to 12 percent by 2032 (representing a net reduction in fossil fuel consumption resulting from each project to a megawatt hour equivalent). The RES also emphasizes the importance of partnership in the utilities' offerings of these programs. Partnership with a large network of Vermont-based installers and contractors is a core part of GMP's offerings. Indeed, GMP does no installation or maintenance work itself. All this work is contracted out to third-party partners.

The offerings provide direct benefit to both participating and non-participating customers: one that creates innovative revenue streams (in the form of margins on lease payments or equipment sales, and additional beneficial electric sales at retail electric rates that generally exceed the additional power and transmission costs to support them) flowing to our customers in the form of reduced rates. In effect, this additional net revenue will offset revenue that is being lost through net metering and other policy choices now. If revenues continue to decline, customers will likely face significant rate pressures in the coming years because they will need to cover our fixed costs, plus the costs of further investments and improvements needed to maintain GMP's infrastructure in the future.

Also, as described earlier, many of our offerings deploy products to customers' locations that provide GMP the ability to aggregate demand through shared access and control in order to strategically dispatch those resources to decrease GMP's monthly and yearly peaks, to store energy for use at times when it is most expensive, and to participate in the ISO-New England ancillary services market. The aggregated devices can also be used to improve grid resiliency and as part of a choreographed effort to integrate renewables in the grid that is increasingly complex to manage. In these ways, they generate additional power supply and grid cost savings, creating benefits that flow to the benefit of all of GMP's customers by reducing costs in the long-term. They are therefore grid assets and customer assets at the same time.

Q26. How has GMP been providing these innovative pilots to date?

A26. GMP provides innovative pilots through a Commission-approved program designed to facilitate careful incubation of innovative energy services on a small scale. Then, if these innovative services "prove out," meaning they demonstrate a sustainable trajectory to generate revenue for non-participating customers, there is an opportunity to convert them into fully tariffed programs.

Here's how it works. We submit detailed information on the proposed program at the time of the initial pilot filing. This includes a narrative description of the proposal, how it meets the applicable eligibility requirements, and detailed projections of revenues (all flowing to customers) and costs. GMP also files the proposed contract (including pricing, terms, and conditions) for innovative services.

Then, as the pilot continues, we provide status reports regarding how offerings are performing. At the end of 18 months, we terminate the pilot, either commencing a fully tariffed program or ending provision of the service, depending on how the viability of the benefits for non-participating customers proves out. The ability to innovate through this program is critical to customers and has led to advances in GMP's service offerings that customers are now able to access. GMP has also built new organizational skills to deliver these programs, including identification and development of third-party partnerships, new technology evaluation and development of customer value propositions, customer program design, pricing and promotion, among others. We believe these new skills, coupled with our established capabilities to safely and cost-effectively operate our grid,

are the emerging competencies needed for GMP to continue to lead in energy transformation.

Q27. So, you are proposing to continue the current program?

A27. Yes. In this changing energy landscape, the innovative pilot program has delivered benefits to customers and is an important piece of how we deliver services. We do have some important qualifications to improve the program. First, we will continue to incorporate the improvements to the innovative pilot program we agreed to make, based on feedback from the Department and other stakeholders. In the Docket No. 8794 Memorandum Detailing Changes to Innovative Pilot, we developed certain forms of customer disclosures, a methodology for tracking costs, updates to the savings calculator used by GMP, and we committed to and did file an open access billing tariff and peak shaving pilot. A copy of this memo is provided as **Exhibit GMP-BO-5.** We continued to work with the Department to fine-tune our data collection to help us analyze what pilots should be transitioned into tariffs culminating in a Data Collection and Reporting Plan and Form which was filed in Case No. 17-3232 and is attached as **Exhibit GMP-BO-6**

Second, we are proposing that, where appropriate, innovative products and services provided under new pilots have the capability for shared access to GMP, as the technology to do this becomes available. This will ensure that they provide benefits to all customers as grid assets, in addition to the increased revenues these programs bring that will serve to decrease rates.

Q28. Why it is important to continue this program in this multi-year period?

A28. Our offerings are the front line of the energy transformation being sought by our customers and by the State of Vermont. Consistent with this transformation, these products and services are critical to meet GMP's RES targets in a cost-effective manner for customers. These programs also are critical tools to offset the declining sales due to net metering and efficiency. As I described earlier, they will also generate new revenue and additional power supply and grid cost savings and benefits that flow to the benefit of all of GMP's customers, reducing costs in the long-term. Moreover, they are an important part of our reimagined grid, and will be necessary to help to smooth and make seamless the integration of renewables onto the grid. They will help allow us to become the utility we must become to serve customers well in the coming years.

Q29. Does the innovative pilot provision enable GMP to get rate recovery of innovative pilots and services?

A29. No, the Innovative Pilot program itself does not speak to rate recovery, and the Program does not independently authorize recovery of costs associated with these programs. Rate recovery of pilot-related costs will be taken up in future rate cases, unless we propose that a specific Innovative Pilot program that is newly developed during the term of the Plan be allowed in rate base under the New Initiatives exception discussed in Question 19 above. As explained above, it is important that we have a mechanism during the term of the Plan to propose rate-basing capital investments, where appropriate, associated with pilot programs in the event that any of these programs experience a dramatic increase in

customer demand during the term of the Plan. The primary goal of the innovative pilot provision is to provide a transparent process for careful incubation of customer-focused programs to ensure that they prove out for customers before they are grown into full programs; some of these programs may remain small in scale, and others may scale up more quickly due to high customer demand. While we anticipate taking the risk on cost recovery of most of these new programs until a future rate case, programs that are started during the term of the Plan may mature to the point that greater levels of capital are required to support their growth and customer demand, in order to capitalize on the benefit for all of our customers. In the event that an exceptional new Pilot program is developed during the Plan that justifies including in rate base, we will propose such spending as part of the annual base rate process, with full known and measurable information documenting why the spending is in customers best interests. Any new Pilot launched during the Plan that is not specifically requested to be included in rates during the term of the Plan will be included in the rate case that will be filed in the last year of the Plan, if appropriate.

Q30. How does the Innovative Pilot support the transformation GMP is going through in this time of declining sales, enhanced small scale generation, and rapid technological change?

A30. This type of flexible pilot program is critical for GMP's ability to respond on behalf of our customers to significant shifts in the electricity sector, which is changing faster than the traditional framework for energy regulation is designed to accommodate. The pace of

regulatory change in the electric sector is measured and generally retrospective in nature, which is appropriate in many respects, but because of this, it is not always best suited for quick adjustments to new and emerging trends in the sector. This pilot program provides critical flexibility to test new services and programs on an appropriate small scale, and with important guardrails. We are seeking to continue the program because it allows GMP to be far more responsive to potential changes that may benefit our customers, and therefore allows us to best serve our customers' interest in the long-run.

V. Treatment of Subscription-based Cloud Services as Capital Expense

Q31. Can you explain what cloud-based services are?

A31. The software systems being used at GMP to support and automate our operations is evolving. One of the major opportunities we see is the movement of basic technology delivery from locally hosted systems to location-less "cloud" services. In the past, most of the software systems used at GMP were locally hosted in our data centers – meaning the hardware (servers) is located and maintained on-site in a GMP owned facility, and the software is licensed by GMP to be run locally on those GMP-owned servers. For example, we have several server rooms in Rutland and Colchester that manage major systems for the Company. Users might remotely access this hardware and software over our GMP-maintained network, but the physical infrastructure and software is all owned and maintained by GMP. Company-specific, locally-hosted computing environments are rapidly evolving as the majority of software systems move to cloud-based delivery model. Under a cloud model, software systems reside remotely at large-scale hosting

centers and are delivered to user communities via web browsers. Cloud models typically involve a recurring subscription rather than a one-time, multi-year license. Rather than purchase hardware and separately license and maintain software, software vendors are offering subscriptions to remote systems where the hardware and software are delivered as a package. These arrangements are described as cloud services or software-as-a-service ("SAAS"). The subscription typically provides a certain number of users secure access to use the software system on a monthly or yearly basis. Subscription-based cloud delivery has the advantage of removing costs associated with maintaining local hardware systems, as well as the expense of constantly patching and upgrading the software application to ensure it is running the latest, supportable version.

Q32. Can you explain how cloud-based systems are currently handled from a utility accounting perspective, as compared to typical hardware or software investments?

A32. Yes. Currently cloud-based subscription services are treated as an operating expense, because, in the traditional sense it is not a specific physical asset possessed by the utility, as had been the case with the more traditional, locally hosted hardware and software purchases. Under the traditional approach, investments in hardware and locally hosted software have been treated as a capital expense, because there is a specific asset associated with those expenses.

Q33. Has the treatment of cloud services evolved in the utility context and elsewhere?

A33. Yes. Recently, the National Association of Regulatory Utility Commissioners ("NARUC") issued a recommendation and guidance on the issue of treating subscription-based cloud delivery as a capital investment rather than an operating expense.[1] Several other states' regulatory commissions have considered allowing for this change in accounting treatment. We agree with NARUC's recommendation and guidance that the value of the solution for customers should be the primary consideration, not the form of the solution, for utility decision-making on technology investments. An incentive to choose a locally delivered solution over an equivalent subscription-based cloud solution is misplaced if it comes at the expense of customers from a performance, capability and/or cost perspective.

Q34. How is GMP proposing to handle cloud-based services in its multi-year plan?

A34. We are proposing to treat cloud-based software services in the same manner as traditional IT purchases, as a capital expense, rather than an operating expense. At this time and for the term of the Plan, GMP foresees a relatively small number of opportunities to adopt subscription-based cloud services as components of our enterprise, still within the capital spending caps we have proposed. We do not foresee an abrupt shift in the use of these solutions but believe long term there will be more and more applicability to our operational objectives as technology providers are evolving their solutions to cloud models.

[1] See https://pubs.naruc.org/pub.cfm?id=2E54C6FF-FEE9-5368-21AB-638C00554476

Q35. Can you please explain why GMP believes treating cloud-based services as a capital expense is appropriate and in customers' best interests?

A35. Yes. Traditionally, the costs associated with procuring IT assets were separated into two buckets: capital costs and operating expenses. Capital costs included the project elements required to make the solution available to its users. These elements included software licensing, hardware equipment, networking equipment, data center space, system integrations, and data conversions. Operating expenses included the project elements required to make the users successful in their use of the solution. These elements primarily included initial and on-going user training. More recently, IT vendors are delivering their solutions via a cloud-based model, which typically changes the long-term licensing construct to either a monthly subscription fee or a short-term (annual, for example), pre-paid system access fee. Regardless of how the fees are structured, the fee associated with a cloud-based solution remains part of the costs required to make the solution available to users, which has traditionally been considered a capital cost. User training remains a separate cost under a cloud-based model and would continue to be treated as an operating expense. In the Plan we are seeking to continue the spirit and intent of how IT assets are treated and simply clarify that treatment when we deploy cloud-based solutions in the future.

Q36. What cloud-based expenses do you have now and what expenses do you believe are best migrated to cloud-based systems in the future?

A36. GMP has several subscription-based cloud solutions in its portfolio of technologies today. One example is our resource call-out system, called ARCOS. ARCOS manages and automates doing call-outs to field personnel under different conditions. When a car pole accident happens in the middle of the night, ARCOS is run by one of our control room operators to contact the on-call crew closest to the accident to respond. ARCOS is a cloud service that GMP has been using for almost eight years and was one of the first cloud solutions we implemented. We pay for the ARCOS service on a subscription basis and do not maintain any data center hardware or perform any system patching/updating for this service, thereby eliminating most operating expense associated with supporting this solution. Our annual subscription cost for ARCOS is approximately $80,000.

A second example of a cloud solution is our shared access control platform. This platform establishes connectivity to the distributed energy resources we use to deliver our innovative program and aggregates those devices for use during peak demand events and other grid coordination activities. We have heat pumps, water heaters, and electric vehicle chargers integrated into this platform. This platform also integrates customer storage systems in our bring-your-own-device program. Our subscription cost for our share access platform is tiered based upon the number of distributed energy devices that are integrated into it. Currently, our annual cost for this service is approximately $90,000.

Most technology vendors are migrating their solutions to a cloud delivery model, which will allow us to decrease our investment in data center operations and system

administration as we migrate more of our solutions to this model. During the period of the Plan, any adoption of new technology or transition of existing technology under a cloud model will be managed within the capital investment limits being proposed.

Q37. Given that you are proposing to migrate these types of purchases from operating expense to capital expense, how do you propose to handle them during the multi-year plan period?

A37. I believe it is time to transition to cloud-based IT capital investment to keep pace with the technology market as well as the more progressive regulatory bodies in the country. Within our multi-year IT capital plan, we will seek to migrate any existing software applications to a cloud delivery model where there is a compelling justification to do so based on our existing assets supporting the locally delivered model. We will be mindful not to strand assets while also being careful to not re-invest in normal hardware cycles when there is a cloud alternative. During any software application procurement we will fairly evaluate (and document) cloud solutions against local delivered solutions to select the best value for our customers short and long term. Regardless, we will perform within the budget we have set in the Plan for capital investment.

Q38. Does that conclude your testimony at this time?

A38. Yes, it does.