STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

Docket No. DE 17-189

Liberty Utilities (Granite State Electric Corp.) d/b/a Liberty Utilities

Petition to Approve Battery Storage Pilot Program

Legal Brief of Liberty Utilities

Liberty Utilities (Granite State Electric Corp.) d/b/a Liberty Utilities (the "Company" or "Liberty"), through counsel, respectfully submits the following legal brief demonstrating that the record in this docket supports the conclusion that the Company's proposed investment in the battery storage pilot program satisfies the "public interest" standard of RSA 374-G.

I. Purpose of RSA 374-G.

Liberty seeks approval of the battery storage pilot program as described in the Settlement Agreement (the "Pilot") under the authority of RSA 374-G, which allows for regulated utilities to recover investments in distributed energy resources. Before discussing the statute's specific requirements, it is useful to begin with the statute's purpose statement.

> 374-G:1 Purpose. – Distributed energy resources can increase overall energy efficiency and provide energy security and diversity by eliminating, displacing, or better managing traditional fossil fuel energy deliveries from the centralized bulk power grid, in keeping with the objectives of RSA 362-F:1. It is therefore in the public interest to stimulate investment in distributed energy resources in New Hampshire in diverse ways, including by encouraging New Hampshire electric public utilities to invest in renewable and clean distributed energy resources at the lowest reasonable cost to taxpayers benefiting the transmission and distribution system under state regulatory oversight.

As stated below, the Pilot will help advance these goals.

II. Legal Standard.

To qualify for rate recovery, the Commission must find a utility's investment in distributed energy resources to be "in the public interest." RSA 374-G:5, II. The statute lists the following nine factors that the Commission must consider in determining whether the investment is in the public interest:

> (a) The effect on the reliability, safety, and efficiency of electric service.
>
> (b) The efficient and cost-effective realization of the purposes of the renewable portfolio standards of RSA 362-F and the restructuring policy principles of RSA 374-F:3.
>
> (c) The energy security benefits of the investment to the state of New Hampshire.
>
> (d) The environmental benefits of the investment to the state of New Hampshire.
>
> (e) The economic development benefits and liabilities of the investment to the state of New Hampshire.
>
> (f) The effect on competition within the region's electricity markets and the state's energy services market.
>
> (g) The costs and benefits to the utility's customers, including but not limited to a demonstration that the company has exercised competitive processes to reasonably minimize costs of the project to ratepayers and to maximize private investment in the project.
>
> (h) Whether the expected value of the economic benefits of the investment to the utility's ratepayers over the life of the investment outweigh the economic costs to the utility's ratepayers.
>
> (i) The costs and benefits to any participating customer or customers.

The Commission must give each of these factors "balanced consideration and proportional weight." RSA 374-G:5, II. That is, for example, a shortcoming as to one factor cannot override the success demonstrated as to the other eight. This brief discusses how consideration of the

record facts related to each statutory factor supports a finding that the Pilot is "in the public interest."

III. Analysis.

The section headings A through I below correspond to the statutory subsections RSA 374-G:5, II (a) through (i).

A. "The effect on the reliability, safety, and efficiency of electric service."

The Pilot will have a positive effect on the reliability, safety, and efficiency of electric service. RSA 374-G:5, II(a). As for reliability and safety of the equipment itself, the batteries and related components behind the meter will be installed by qualified professionals selected by Liberty through an RFP process. Transcript of 11/29/18 hearing ("Transcript") at 32, 170-171. This work will be governed by quality standards in the agreement between Liberty and the installer, and will be subject to the requirements of local electrical regulations and inspections. On the Company's side of the equipment, Liberty will install and own a modified version of its revenue-grade meters, which will be connected to the Company's distribution system in the same fashion as all other customers. Transcript at 59-60, 128-131. Thus, those customers participating in the Pilot will continue to enjoy reliable, safe, and efficient distribution service.

A second component of reliability is that the batteries will provide a source of back-up power during outages. Transcript at 73, 101. The batteries are projected to last about 24 hours under normal use, which time can be extended up to several days if the customer sufficiently curtails use during the outage. Transcript at 101.

The batteries installed under the Pilot will have no adverse effect on system reliability, safety, and efficiency, as they will simply reduce the peak load of each customer and thus lower the system peak load. Transcript at 43. As part of the Pilot, Liberty will study whether the

batteries have positive system benefits beyond the expected transmission and distribution cost savings. Mr. Singh described these potential benefits in his prefiled testimony, Exhibit 6.

Since batteries require very little ramp-up time, in contrast with fossil fuel generators or turbines, they can be used for grid services that require quick response times such as frequency regulation, or for standard grid support functions like capacity relief. Exhibit 6, at Bates 87. The batteries can also can be leveraged as loads or generators, which allows them to either source or sink power depending on the needs of the grid. These high performance characteristics of batteries make them flexible to operate and amenable to any number of grid services, as opposed to investing in purpose-built solutions that risk becoming stranded assets should the needs of the grid change. Id.

Mr. Singh itemized these and other characteristics of battery storage technology that can benefit the grid, including:

> **Scalability**: Utilizing smaller, distributed resources allows a central operator to scale installed capacity according to market dynamics. This allows generation to grow in proportion to load requirements, and allows network planners to adjust capacity according to variances in actual load growth. This helps to provide more measured investments in capacity that are tied to actual market conditions.
>
> **Locational Benefit:** Once again, due to their distributed nature, residential storage can be collocated at specific nodes or along specific feeders in the network to deliver value where it is needed the most. This allows utilities to avoid oversizing centralized equipment in order to solve issues that present themselves at the "edge" of the grid (i.e. closer to loads).
>
> **Planning Flexibility:** Given the flexible and scalable nature of storage, it also provides an effective hedge against potential variances in actual load growth patterns. Operators are able to deploy localized generation that could act as an insurance policy should, for example, system demand decrease unexpectedly. This would prevent the need to build large centralized assets that may become underutilized.

Exhibit 6 at Bates 87-88. Although these benefits were not quantified in this docket, the Pilot will collect information that may confirm and measure these actual and potential

benefits. Exhibit 18 (Settlement Agreement) at Bates 18-19. Simply collecting the data to answer these questions is a "positive effect" related to the "reliability, safety, and efficiency" of the Pilot.

B. "The efficient and cost-effective realization of the purposes of the renewable portfolio standards of RSA 362-F and the restructuring policy principles of RSA 374-F:3."

a. The Pilot will help advance the RPS objectives.

The overriding purpose of the renewable portfolio standard (RPS) law is to [1] "stimulate investment in low emission renewable energy generation technologies." RSA 362-F:1. These investments will further the more specific RPS goals to [2] "lower regional dependence on fossil fuels," [3] keep "investment dollars in the state," and [4] reduce "greenhouse gases, nitrogen oxides, and particulate matter emissions." *Id.* The Pilot will not enable participants to generate renewable energy credits or increase the number of renewable energy sources under the RPS law because residential battery storage does not currently fall within any of the classes of the RPS. However, the battery storage technology involved in the Pilot will help accomplish these RPS purposes, which is the first factor posed by RSA 374-G:5, II(b) quoted above, whether the Pilot will have a positive effect on "the efficient and cost-effective realization of the purpose of the renewable portfolio standards."

First, the Pilot may [1] "stimulate investment in low emission renewable energy generation technologies." Although Liberty's portion of the Pilot is designed to work with any generation source being used by the participating customer, whether that is energy from the grid or a renewable source, the bring-your-own-device (BYOD) portion of the Pilot may encourage participation of third party aggregators, like intervenor Sunrun, who bundle a similar battery

product with solar PV systems. Thus, the BYOD portion of the Pilot may "stimulate [such] investment."

Second, as to items [2] (less reliance on fossil fuels) and [4] (less air pollution) above, the goal of the Pilot is to reduce Liberty's system peaks for the purpose of lowering transmission costs that are calculated on those peak days. Since the most polluting oil and coal fueled generators often provide the marginal energy at peak times, a reduction in Liberty's peak will cause a corresponding reduction in the energy required of these older facilities, resulting in direct reductions in the use of fossil fuels and associated pollution. Transcript at 96-97.

The same benefits flow from using the batteries rather than home generators during power outages, which generators are typically fueled by gasoline, propane, or diesel. Exhibit 5 at Bates 8 (Tebbetts testimony). Thus, the Pilot will reduce fossil fuel consumption and lessen air pollution in two ways.

b. <u>The restructuring policy principles of RSA 374-F:3</u>.

RSA 374-F:3 contains the 15 "restructuring policy provisions," listed below, most with paragraphs of text to explain and implement the principles. Since the overall task at hand is to consider all of the nine factors listed in RSA 374-G:5, II, Liberty interprets the directive in this section to "consider … the restructuring policy principles" to mean a review of those principles, indicating how they may militate in favor of, or against, approval of the Pilot. The impact of any single of the 15 restructuring policy principles to approval of the Pilot under RSA 374-G is minor because consideration of all 15 restructuring principles is only one-half of the review suggested one of the nine factors in RSA 374-G:5, II(b), the other half being the RPS goals discussed above. Therefore, the review of these principles will be brief.

I. System Reliability

This principle states, "Reliable electricity service must be maintained while ensuring public health, safety, and quality of life," and was addressed in Section A above. The Pilot will have no detrimental effect on reliable and safe service, and the environmental benefits discussed in Section D below will help ensure health and quality of life.

II. Customer Choice.

The Pilot furthers these restructuring principles of "innovative markets," the opportunity to choose other battery suppliers through the BYOD phase of the Pilot, and that "Customers should expect to be responsible for the consequences of their choices," all of which are policies of "customer choice." RSA 374-F:3, II. Although Pilot participants can still choose competitive supply service, they would then not have the energy portion of their bill subject to the TOU rates (until a supplier agrees to offer such rates). To the extent this limitation may cause participants not to choose competitive supply, which is contrary to this principle, the effect will be *de minimus*.

III. Regulation and Unbundling of Services and Rates.

The Pilot serves these principles of providing "customers clear price information on the cost components of generation, transmission, distribution, and any other ancillary charges," and of not affecting the unbundling of services and rates that has occurred since restructuring. Indeed, the Pilot will give customers very specific pricing information related to the TOU rates, and both the intended reduction in transmission rates resulting from the Pilot and the availability of TOU rates benefit from unbundled rates. The Pilot also falls into this principle's exception that "distribution service companies should not be absolutely precluded from owning small scale distributed generation resources as part of a strategy for minimizing transmission and distribution costs," an exception fleshed out in RSA 374-G.

IV. Open Access to Transmission and Distribution Facilities.

This restructuring principle is largely inapplicable to the Pilot, but the Pilot does promote "[n]on-discriminatory open access to the electric system for … retail transactions" through the BYOD program.

V. Universal Service.

Most of this principle address the transition to default service solicitations and the concurrent availability of competitive supply. The broad principle articulated in this section is that a "restructured electric utility industry should provide adequate safeguards to assure universal service." The Pilot will have no adverse impact on access to service.

VI. Benefits for All Consumers.

The overriding principle here is: "Restructuring of the electric utility industry should be implemented in a manner that benefits all consumers equitably and does not benefit one customer class to the detriment of another." The Pilot's benefit-cost analysis discussed in Section G below demonstrates that the Pilot will confer a modest net gain to all Liberty customers. Access to the Pilot will be nondiscriminatory, i.e., first come/first served. Transcript at 147.

VII. Full and Fair Competition.

This principle states, in full: "Choice for retail customers cannot exist without a range of viable suppliers. The rules that govern market activity should apply to all buyers and sellers in a fair and consistent manner in order to ensure a fully competitive market." To the extent this policy applies her, the BYOD program will give customers an option for a battery storage program other than the Pilot.

VIII. Environmental Improvement.

The broad principle included here is that "[i]ncreased competition in the electric industry should be implemented in a manner that supports and furthers the goals of environmental improvement." Although the environmental benefits of the Pilot discussed in Section D below do not necessarily flow from "increased competition," the Pilot nonetheless furthers this policy goal of "environmental improvement."

IX. Renewable Energy Resources.

This principle states that "innovative market-driven approaches are preferred to regulatory controls to reduce adverse environmental impacts." Again, this policy is directed toward renewable generation and not storage, but the

Pilot is an "innovative" approach that will help "reduce adverse environmental impacts."

X. Energy Efficiency.

This principle set the stage for what has become the utilities' customer-funded energy efficiency programs, which is not relevant here. But it also includes a directive "to reduce market barriers to investments in energy efficiency and provide incentives for appropriate demand-side management." The Pilot, if successful, will "reduce market barriers" that third party aggregators and others now face to provide substantial peak reduction services. Absent the Pilot's investment in the hardware, software, and experience that Liberty will gain in predicting peaks and dispatching batteries, the BYOD program provided for in this docket would still be many years in the future.

XI. Near Term Rate Relief.

This principle states that "goal of restructuring is to create competitive markets that are expected to produce lower prices for all customers." The Pilot will not impact the "competitive market" for electric supply, which was the primary focus of these restructuring principles, but the Pilot will further the goal of lower prices. The goal of the Pilot is to reduce Liberty's system peaks which will cause a reduction in transmission rates. Transcript at 50, 85, 90.

XII. Recovery of Stranded Costs.
XIII. Regionalism.
XIV. Administrative Processes.
XV. Timetable.

These four policy principles address issues clearly irrelevant to the Pilot. "Recovery of Stranded Costs" established goals for allowing the utilities to recover the costs of assets that would be stranded as a result of restructuring. "Regionalism" addresses the role of NEPOOL and the state over the restructuring process. "Administrative Process" directs the Commission to adopt procedures to streamline processes and "enable competitors to adapt to changes in the market in a timely manner." And "Timetable" simply states that the "commission should seek to implement full customer choice among electricity suppliers in the most expeditious manner possible."

C. "The energy security benefits of the investment to the state of New Hampshire."

The batteries in this Pilot will certainly not solve New Hampshire's energy security needs, but they will play a role in providing energy security for the customers who participate in the program as source of energy during outages, as discussed above. And as we increase understanding of the broader benefits of batteries, partly through the information gained from the Pilot, batteries will serve an important function in supporting energy security to the grid as a whole. The Pilot will present the first opportunity in New Hampshire to study the potential of battery storage.

D. "The environmental benefits of the investment to the state of New Hampshire."

The Pilot provides environmental benefits in two ways. First, by lowering the demand for oil and coal generated power at peak periods, which is when those dirtier plants are often called into service, the batteries will reduce the generation needed at those times. That is, by calling on 5MW of storage at peak times, the Pilot will eliminate the need for, say, a coal plant to produce that same 5MW of energy. Assuming the batteries were charged with cleaner sources of energy from the grid during off peak hours, or from customer-sited renewable sources, the Pilot will have direct beneficial effects on the environment. Transcript at 96-97.

During outages, the Pilot will similarly provide environmental benefits. Customers enrolled in the pilot will be able to use the batteries for backup power and thus avoid traditional fossil-fueled backup generators. Over the ten-year life of the pilot, and assuming the Company's historic outage statistics, the Company performed a rough calculation of those emissions benefits. *See* Exhibit 5 at Bates 8.

E. "The economic development benefits and liabilities of the investment to the state of New Hampshire."

The Benefit-Cost analyses that are attached to the Settlement measure the direct economic benefits and costs of the Pilot. These calculations show a modest net benefit over the life of the Pilot. Exhibit 18 at Bates 26-37.

Taking a broader view, other economic benefits will flow from the fact that the Company will hire local contractors to install the batteries, and participants may have to hire local electricians to make the necessary upgrades to accept the batteries. The BYOD program will bring another wave of similar upgrade and installation work. Although modest, Mr. Barnes testified that, "[c]onsumer adoption of DERs tends to be a gradual process that begins slowly and accelerates over time." Exhibit 15 at 25. By starting the process now, the Pilot will set the stage for the acceleration in adoption of battery storage and related DER.

Mr. Singh discussed potential liabilities, or risks, that come with the Company's investment in the Pilot, and why these risks are appropriate to accept in this instance. They include "integration" risk, which is "understanding how to incorporate the control functions of [the Pilot] into the utility's existing control architecture." "Technology risk" is the use of "an unproven technology" that relies in part on "customer internet for its communications architecture." These are some of the "technical challenges that must be quantified before a large scale rollout of these assets can be deemed reliable enough to replace traditional utility assets." But these are risks that Liberty should take in the context of a Pilot so that they can be solved, or not, before large scale rollout:

> Each of the above risks represents a compelling reason why utilities should pursue pilot projects in order to better understand what role energy storage could play in their future operational portfolio. Controlling a federated group of assets versus a centralized generating resource is a distinct departure from typical utility operations; however with an increase in DER penetration being fueled by

> lower storage pricing it is a change that we feel utilities must embrace if they are to be prepared to adapt to new market realities.

Exhibit 6, at Bates 90.

F. "The effect on competition within the region's electricity markets and the state's energy services market."

The installation of batteries at customers' homes will not impede the competitive market for energy supply. Liberty provides default service to its customers through a robust competitive bidding process approved semi-annually by the Commission. For customers that do not have solar installations, the batteries will be charged by the grid, i.e., from those suppliers who win the Company's RFP, or a third-party supplier chosen by the customer. Customer usage will likely not be reduced by the Pilot, only shifted to off-peak periods, which may actually benefit competitive suppliers since 5MW of power will be displaced during the most expensive periods, alleviating the suppliers' need to acquire that expensive power.

The Pilot will support competition in the regional energy services market through the BYOD program. Under the BYOD program, customers would acquire batteries from a provider other than Liberty, and would rely on one or more third-party aggregators to dispatch the batteries during peak hours. Exhibit 18, at Bates 14. The Settlement provides for a Working Group will to develop a Request For Information for third-party aggregators and a later competitive solicitation and accreditation process. *Id.* The BYOD program was first suggested by SunRun through the testimony of Mr. Barnes specifically because it would promote competition among energy service providers. Mr. Barnes explained:

> The BYOD model and its predecessors are among the most innovative, flexible, and forward-thinking DER utilization programs that I am aware of. The BYOD version in particular is well-suited for supporting the growth of a competitive energy storage market while balancing the risks and benefits to participants and non-participants.

Exhibit 15, at 34. Thus, the BYOD component of the Pilot expressly provides for and encourages regional competition among energy services providers.

G. "The costs and benefits to the utility's customers, including but not limited to a demonstration that the company has exercised competitive processes to reasonably minimize costs of the project to ratepayers and to maximize private investment in the project."

a. Costs and Benefits.

A summary of the benefits and costs of the Pilot can be found in Exhibit 19 at Bates 4–5 (Tebbetts Technical Statement). The financial benefits of the project include the avoided costs of regional and local transmission charges and capacity market charges. The costs include expenditures for program administration, marketing, and plant investment. Exhibit 19 at Bates 4. Phase 1 includes all of the programming costs associated with the battery pilot and provides a total nominal net benefit to all customers in Phase 1 of $161,343, with a net present value of ($138,037). *Id.* at Bates 5; *see* Attachment 1 to the Settlement Agreement, Exhibit 18, at Bates 26. Phase 2 provides an additional 300 batteries to provide benefits to customers. Exhibit 18 at Bates 31 provides for a total nominal net benefit to all customers for both Phases of $842,513, with a net present value of $8,470. *See also* Exhibit 19 at Bates 5.

There are other benefits not calculated as part of the Benefit-Cost analysis described above. Lebanon City Councilor Clifton Below testified that the project will likely result in positive economic benefits due to the Demand Reduction Induced Price Effect (DRIPE).

> With up to 5 MW (about 2.5% of Liberty's peak demand) of battery discharge peak load reduction, this could be significant. As the 2018 Avoided Energy Supply Cost (AESC) study points out at p. 175, the slope of the supply curve is steepest during peak hours, and "[d]uring these very high load hours, a modest reduction in demand will tend to yield significantly lower market prices." Such DRIPE benefits would benefit all electric customers, helping to support a conclusion that this pilot is more likely than not to yield net positive economic benefits.

Exhibit 12, at 9.

The Time-Of-Use ("TOU") rates are another source of benefits and value for customers who participate in the pilot program, but which was not part of the cost-benefit test. As explained in the Technical Statement of Heather Tebbetts, Lon Huber, and Clifton Below, TOU rates capture value for customers because the rates more accurately reflect actual cost causation. According to their Statement:

> The development and application of TOU rates can be thought of as a progression from a very rough justice of allocating costs equally across all hours to a more granular and refined justice of allocating costs to blocks of time in each day, week, and season that reflect strong underlying temporal differences in cost drivers and result in more appropriate and economically efficient price signals to electric customers.

Exhibit 20 at Bates 1. The ability for participating customers to save money through "TOU arbitrage" is an element that puts the Pilot "on the leading edge of residential battery deployment." Transcript at 63.

Another benefit not reflected in the Settlement's cost-benefit analysis is the ability of participants to use their batteries for back-up power during outages, as discussed above. Transcript at 73. While having backup power is a benefit that is difficult to quantify and that varies based on the individual needs of each customer, Ms. Tebbetts testified that it appeared to be a significant factor in attracting potential participants to the pilot. "They want it for backup power. Their biggest issue is reliability." Transcript at 146.

A second benefit arising from the backup function of the batteries that can be measured is that the batteries can replace the need for a home standby generator, which cost approximately $10,000 to $12,000. Testimony at 102. Pilot customers receive the benefit of such a system for only $50 per month. This benefit is also not measured in the benefit-cost analysis.

b. Use of Competitive Processes.

The second phrase of RSA 374-G:5, II(g) asks the Commission to consider whether there was a "demonstration that the company has exercised competitive processes to reasonably minimize costs of the project to ratepayers and to maximize private investment in the project." Liberty has employed one such "competitive process" and intends to employ another.

Appendix 1 to Exhibit 2, Ms. Tebbetts' initial testimony in this docket, is the report of Liberty's consultant, Alectra Energy Solutions Inc., titled, "Battery Energy Storage System Technology Market Scan." Alectra undertook "an environmental market scan of available prominent residential storage technologies that can be located behind the meter and that can be, as grid assets, effectively aggregated and controlled for the purpose of providing a variety of functions" Exhibit 8, Appendix 1, at Bates 032R.[1] After collecting and analyzing specific information from a number of potential vendors, Alectra summarized the "criteria specific pros and cons of each system/component" and its evaluation of those systems, which Alectra assembled into in several charts. *Id.* at 43R through 49R. Alectra concluded that, "[b]ased on reported pricing and software capabilities, it would appear that Tesla's Powerwall 2 product is the ideal technology for the [Pilot] program." *Id.* at 50R. At the time of Alectra's evaluation and Liberty's decision, Tesla's cost was less than one-half of the storage-cost-per-kwh as the other providers. *Id.* at 45R.

Liberty also considered a proposal later submitted by Sunrun, but Tesla's proposal remained the lowest cost. Ms. Tebbett's Supplemental Testimony, Exhibit 5, at Bates 11-12,

The second "competitive process" will occur when Liberty issues an RFP to select the company or companies that will install the battery systems. For this RFP, the Company will

[1] Note that Liberty filed a less-redacted version of Appendix 1, which was admitted as Exhibit 8.

follow its routine procedures for obtaining outside services through its well-established RFP process. Transcript at 32, 170.

Liberty thus chose Tesla, and will choose the installer, through "competitive processes to reasonably minimize costs." RSA 374-G:5, II(g).

H. "Whether the expected value of the economic benefits of the investment to the utility's ratepayers over the life of the investment outweigh the economic costs to the utility's ratepayers."

As described in Section G above, the Pilot is expected to result in an overall positive net present value over the life of the Pilot. As provided in the benefit-cost analysis attached to the Settlement Agreement, the Pilot will provide a total nominal net benefit to all customers for both Phases of $842,513, with a net present value of $8,470. Exhibit 18, Attachment B at Bates 31.

I. "The costs and benefits to any participating customer or customers."

Note that the Company did not perform a formal benefit-cost analysis for any particular or average customer. The analysis central to this docket addressed the costs and benefits of the entire program to all of Liberty's customers. The benefits and costs for each participant may vary widely given individual circumstances, differences in usage, and other variables. However, below is a description of the costs and benefits that are likely to apply to most participants.

a. Costs to participating customers.

Each participating customer will pay for two Tesla batteries through either an up-front cost of $4,866 ($2,433 per battery) or a monthly payment of $50 ($25 per battery) for ten years. Exhibit 18 at Bates 7. Customers who terminate their participation in the program prior to the tenth anniversary of battery installation will be charged $450 for removal of each installed battery, which sum Liberty will use to defray the costs of the program. *Id.* And some customers

may incur costs at their home to upgrade or modify their electrical systems to accommodate the batteries.

Under the TOU rates, customers will be charged a higher rate during the peak periods, which could be a net cost depending on their particular usage patterns.

b. Benefits

There are a number of benefits, some of which can be monetized, others will be intangible.

A key measurable benefit for participating customers will be the opportunity to save money on their monthly electric bill through the TOU rates, which will incentivize customers to lower their usage during peak periods. Customers who can eliminate usage during the critical peak periods, or offset use with the batteries, will save substantially even if they use the same amount of electricity. Transcript at 63, 230, and 241-43. Participants will receive periodic reports showing how their batteries are operating in their home. Customers may choose to install a cell phone app that customers can download to see the real-time operation of their batteries. Customers will also be educated on how to most efficiently use the batteries through literature and technical assistance. Transcript at 64-65, 198-200, 228-232, 241.

A second benefit for participating customers is the opportunity to use their batteries for back-up power during outages. This topic is discussed in section G above. Briefly, customers will enjoy the benefits of a backup source of power and will avoid the $10,000 to $12,000 cost of a generator needed to provide similar service, or at least compare that cost favorably to the $50 per month cost of the Pilot. Given that Liberty averages 1.31 outages per year and that those outages last an average of 130 minutes, the batteries, on average, will eliminate any outages at participants' homes. Exhibit 5 at Bates 8. The less measurable benefits of reliable backup power

includes avoiding possible damage to equipment in the home, the interruption of medical or other devices that must run 24/7, and the like.

IV. Conclusion

For the reasons discussed above, after a review of the record in this docket, and after "giving a balanced consideration and proportional weight to each of the … factors" above in light of that evidence, the Company asks the Commission to find that the Pilot, as described in the Settlement Agreement, is "in the public interest," and thus authorize recovery of the investments Liberty will make in the Pilot.

Respectfully submitted,
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By its Attorney,

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