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October 11, 2022

Federal Energy Regulatory Commission  
Secretary of the Commission  
888 First Street, NE  
Washington, DC 20426

***RE: Comments of Interest for Notice of Proposed Rulemaking, Docket No. RM22-14-000***

Dear Secretary Bose:

In accordance with the Federal Energy Regulatory Commission's ("FERC") June 16, 2022, Notice of Proposed Rulemaking,<sup>1</sup> rPlus Hydro, LLLP ("rPlus") submits the following comments. rPlus prepared these comments in response to FERC's proposed changes to its generator interconnection processes and agreements. FERC's proposed changes are intended to increase access to new technologies and to enhance certainty and efficiency for utilities and both large and small generators in the interconnection process. rPlus generally supports this effort; however, we are concerned that several of these proposals would negatively impact the development of needed utility-scale hydroelectric pumped storage projects in the United States. We request FERC further consider its proposed changes in light of hydroelectric pumped storage and revise its proposed changes to encourage and facilitate greater development of these facilities.

rPlus is a limited liability limited partnership based in Salt Lake City, Utah that specializes in the development of utility-scale hydroelectric pumped storage projects. rPlus is one of the nation's leaders in developing this type of critical energy infrastructure. rPlus currently has 12 pumped storage projects in various stages of development across nine states. These projects represent a total of 7.5 gigawatts in energy storage capacity. rPlus also holds more than fifty percent of the current interconnection queue positions for new proposed pumped storage projects.

Pumped storage is the best established and most economical form of large-scale and long-duration energy storage available today. These facilities provide a dynamic and economical means to store grid scale energy and to generate and dispatch, on demand, large amounts of power. Responding within seconds to a utility's need to manage varying energy supply and demand, pumped storage provides spinning reserves and grid flexibility to cost-effectively integrate non dispatchable renewable resources while maintaining system reliability. In addition to providing hours of energy storage, pumped storage facilities keep electrical systems stable and provide critical ancillary grid services such as frequency control, voltage support, inertia, and black

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<sup>1</sup> *Improvements to Generator Interconnection Procedures and Agreements*, 179 FERC ¶ 61,194 (2022)

start capabilities. They also allow greater efficiency, reliability, and resiliency in the use of existing and proposed transmission systems.

As utilities continue to decarbonize their electrical generation mix and move towards intermittent and variable generation sources, energy storage in all forms is becoming a critical infrastructure need for the United States. Because pumped storage can store renewable energy and deliver it reliably to the grid over long periods, creating policy changes and processes that enhance and encourage the investment in and the building of these facilities should be prioritized under this rulemaking.

Some of the proposed rule changes for interconnection, such as studying projects as they are intended to be utilized rather than under worse case scenarios, are positive and encouraging. rPlus supports these types of changes. And while many of FERC's proposed changes will positively improve the interconnection process for solar and wind generators, some of these changes may negatively impact the viability and/or slow the development of pumped storage projects. This is due to the nature of pumped storage projects as high-capacity facilities with large capital costs, long development timelines, and complex permitting requirements.

In order to ensure that interconnection processes are fair, reasonable, and nondiscriminatory for pumped storage projects, rPlus requests that FERC consider the following changes to its proposed rulemaking:

#### **1. Site Control**

The requirement for 100 percent site control is both unrealistic and problematic for pumped storage project development and should be modified or eliminated altogether. Alternatively, since a FERC original license is required for nearly all pumped storage projects, the submission of a valid application for preliminary permit should satisfy the site control requirement.

Pumped storage projects require land both above and below ground for water reservoirs, water conveyance, generation facilities, gen-tie lines, and other facilities. Suitable, economic pumped storage sites are limited in availability and are in shorter supply in the United States than sites for other types of generation. Additionally, pumped storage sites are increasingly located on public or tribal lands which require a substantive environmental review process before site control may be granted. As a result, the land acquisition process for pumped storage sites is often more complicated and longer in duration than for other types of power project sites.

Achieving interconnection early in the development process is an essential aspect of pumped storage development that helps justify further investment in each project. Pumped storage projects require significant and sequential investment in engineering, design, and environmental studies over long periods. Project siting footprints, transmission line routing, or other design aspects may change as the project is studied and alternatives analyzed. Requiring 100 percent site control at the interconnection stage will inhibit the needed flexibility for project design changes that occur during project development.

Additionally, pumped storage projects usually require larger, higher voltage interconnections and often require longer transmission lines than other power projects. For example, both our White Pine project in Nevada and our Seminoe Project in Wyoming require gen-tie lines exceeding 25

miles in length. It is unreasonable to require achievement of 100 percent site control for transmission lines at the interconnection stage for these types of projects.

In sum, requiring 100 percent site control for pumped storage projects may lead to more expensive projects, longer time periods for project studies, and a less efficient FERC licensing process.

- Pumped Storage Projects Located on Federal and Tribal Lands

All pumped storage projects located on federal lands or reservations are subject to FERC licensing. Receiving a right of way, special use permit, or other form of siting control from the regulatory agency in charge of those federal lands requires a substantive environmental review process that is lengthy and typically tiered to FERC's environmental review of the project during the FERC licensing process. As a result, pumped storage projects on federal land generally cannot achieve full site control until the environmental review is complete and the FERC license issued--a multiyear process.

rPlus recommends that the filing of a valid preliminary permit application with FERC satisfy the site control requirement for the federal lands portion of an interconnection application for a pumped storage project. A FERC preliminary permit establishes first-in-line status for an applicant to file an original license application for a given site out of a recognition of the magnitude and risk of the investment that needs to occur prior to filing that application.

In the event a pumped storage project is located on tribal lands, a valid FERC preliminary permit application with the tribe as a co-applicant, or the combination of a valid FERC preliminary permit application and some form of written agreement with the tribe (a letter of intent, memorandum of agreement, or the equivalent), should be acceptable evidence of site control. This additional requirement would recognize the tribe's sovereignty pertaining to the project lands.

Because the preliminary permit is limited in time, a circumstance may arise where the preliminary permit, including renewal thereof, expires prior to the filing of an original license application. In such a circumstance, FERC may require an additional and reasonable amount of development work in the licensing process to demonstrate continued site control. A reasonable showing may be the filing of a Pre-Application Document/Notice of Intent. Historically, only projects on a path to full licensing achieve this milestone.

- Pumped Storage Projects Located on Non-Federal Lands Requiring a FERC License

Pumped storage projects subject to FERC licensing may be located, wholly or partially, on private lands. Unlike solar and wind project projects, FERC licensees for pumped storage projects are subject to Part I of the Federal Power Act and can acquire private property under the eminent domain rights granted therein after the license is granted. Thus, the interconnection service provider has sufficient regulatory assurance at the interconnection study stage that the interconnection customer developing a project subject to FERC licensing requirements can obtain site control in due course. For these reasons, and the reasons stated above, rPlus believes that

the filing of a valid preliminary permit should be sufficient assurance that site control will be achieved when the FERC license is granted.

For state or municipal lands, each applicable agency has its own process for approving, granting or conveying various types of land rights and interests. While eminent domain may not be applicable to these lands, in such cases where a FERC license is required, rPlus believes that the filing of a valid preliminary permit application should still be considered sufficient assurance that full site control can ultimately be achieved to warrant entry of the project into the interconnection process.

- **Pumped Storage Projects Located on Non-Federal Lands Not Requiring a FERC License**

Where a pumped storage project is located exclusively on any combination of private, state or municipal lands, it is possible that a project may not be subject to FERC licensing. In such cases it is appropriate to require a limited form of contractual site control in the interconnection process, as the eminent domain powers under the Federal Power Act are not available.

For circumstances where a FERC license is not required and is not being pursued, rPlus recommends reducing the percentage requirement for core project features to 50 percent (based on the acreage within the proposed project area) and to require no contractual site control for transmission lines, for the reasons given earlier.

## **2. Commercial Readiness**

The proposed commercial readiness requirements are unduly discriminatory to pumped storage, which often do not have the commercial pathways and timelines typically associated with other types of generators. Development of a pumped storage project is an iterative process of assessment and de-risking that takes several years to complete, at a cost of tens of millions of dollars. Development of the project to the point where it can acquire a power purchase agreement, tolling agreement, or project sale agreement with a utility, or where it could be selected in an IRP process, is an unreasonable bar for commercial readiness. However, a utility may be able to demonstrate a reliable interest in the project at an earlier stage in its development. For these reasons, rPlus suggests the achieving of one of the following three criteria as sufficient evidence of commercial readiness for a pumped storage project:

1. A filing of Notice of Intent to Apply for an Original License (NOI) and Pre-Application Document (PAD); or
2. An executed memorandum of understanding, letter of intent, or an equivalent term sheet with a utility; or
3. The project being selected in an IRP process.

In lieu of having achieved one of these, a reasonable commercial readiness deposit is appropriate. rPlus recommends a commercial readiness deposit of \$2,000 per MW, a figure common in industry practice.

### **3. Interconnection Study Fees and Withdrawal Penalty**

The interconnection study deposit requirements, the associated withdrawal penalties, and the proposed study cost allocations are unduly discriminatory or punitive to pumped storage as compared to other renewable technologies.

Under the proposed deposit and penalty requirements, a large capacity pumped storage project (economically sized pumped storage projects typically range from 400 MW to greater than 1000 MW in size) would expect to hit the maximum deposit and/or penalty in every stage of interconnection study, LGIA, and potential withdrawal. Pumped storage projects are therefore disincentivized toward interconnection despite the increased benefit provided towards the reliability and operation of the grid.

Furthermore, the cumulative monetary impact to pumped storage projects is much greater compared to that for other technologies (e.g., solar, wind, BESS). When considered in conjunction with the as-proposed commercial readiness requirements, these deposit requirements and withdrawal penalties disallow equal opportunity for this resource.

Perhaps of greatest concern is the potential unintended consequence of such high fees and withdrawal penalties impacting the commercial process for these types of projects. The high cost of entrance and the liability associated with withdrawal may give large utilities an unfair advantage in commercial negotiations as it relates to the sale of power and ancillary services from the project or in the sale of the project.

### **4. Study Cost Allocation**

The proposal to allocate 90 percent of cluster study costs on a pro rata basis for MW and 10 percent on a per capita for the number of participants is unduly discriminatory toward pumped storage, and wholly disincentivizes large capacity projects.

The assertion that the MW size of a cluster study is significantly more impactful on the cost and effort required to perform the study is incorrect. The number of applicants and the cluster size are both burdensome for the study process, as each project requires its own project management, technical review, study implementation, and deliverable.

rPlus requests FERC reconsider the 90 percent pro rata and 10 percent per capita allocation in favor of a 50 percent pro rata and 50 percent per capita. This 50/50 allocation is an equitable and fair allocation and is currently implemented by SPP, PNM, PSCo, PAC, and TSGT.

### **5. Operating Assumptions**

rPlus applauds the proposed requirement to perform the interconnection study for electric storage resources (stand-alone, co-located, and hybrid) using their resource-specific operating characteristics, as defined by the interconnection customer. Operationally accurate interconnection study, tailored by resource, will provide the opportunity to derive more realistic results and will capture the full positive impact that energy storage can have on the efficiency and reliability of the grid. Energy storage facilities can act as both a generation and transmission asset,

depending on the requirements of the grid, and provide operational benefits in both modes. In this way, energy storage itself is a “Grid Enhancing Technology.” By allowing consideration of the unique operational capabilities, the existing transmission system can be optimized, removing the burden of unnecessary network upgrades on the ratepayer.

rPlus agrees that the rulemaking should provide that all resources, at the interconnection customer’s request, be studied in accordance with their operational capabilities and that interconnection studies use operational assumptions in line with the resources’ likely real-time utilization. These parameters should be defined as part of the interconnection request, memorialized in the interconnection agreement, and should not be overly burdensome to the interconnection customer or transmission provider.

rPlus does request reconsideration of the proposed strict termination requirements for the generator should the operational characteristics not be met. These termination requirements are too stringent and restrictive. While we agree it is highly important to memorialize the studied operational assumptions for a resource in the interconnection agreement, the rulemaking would benefit from opportunistic language should deviation from the originally defined operational assumptions be beneficial.

As one example of a problematic aspect of the reform as proposed, the reform appears to contemplate that an energy storage resource would not charge during peak load hours. This pattern will generally hold true but holding an energy storage resource to a particular operational schedule under an LGIA could lead to inefficient use or under-utilization of the storage resource. For example, if wind energy resources are at an exceedingly high output during peak load periods, the best use of the storage resource may be to charge using that wind energy. The proposed reform would prohibit that functionality. Limiting the charging period to non-peak load hours could also prevent an energy storage resource from being used to increase the efficiency of transmission utilization. For example, if a given set of renewable energy resources using a given transmission line to deliver energy to load would have a relatively low utilization factor on that line, an energy storage resource co-located with the energy resources could allow additional renewable resources to use the line without an increase in the line’s capacity or deferring the need for transmission expansions. For the foregoing reasons, rPlus suggests removing any explicit or implied requirement for not charging during peak load periods.

rPlus proposes that additional language be added to retain the possibility of altering the parameters of the operational characteristics when these changes would provide benefit to reliable and efficient operation of the grid or improve market economics and benefit ratepayers. Furthermore, there should be provision for alteration of the operational characteristics through the interconnection process, in order that the operation of these resources can be dynamic and flexible to suit the needs of the existing transmission system.

Sincerely,

A handwritten signature in black ink, appearing to read "Luigi Resta". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Luigi Resta  
President, rPlus Hydro