Green Mountain Power

Generation Department Capital Planning Framework

GMP's Power Generation capital planning is focused on improving the Safety, Environmental & Regulatory Compliance, Plant Reliability/Operating Efficiency and Production Output of Green Mountain Power's hydro, wind, solar and fuel generation assets, as well as our emerging battery storage assets. The power generation planning process looks at best practices and innovative technologies as a way to achieve these means, whenever possible. Programmatically, the capital projects will generally fall into one or more of these categories:

Safety: The safety of GMP's employees and the Vermont public is central to our culture and the way we operate. We maintain a constant focus on any aspect of our business activity that may pose a safety risk and or improve enhance safe operations. Each year, we typically recommend, justify and perform a number of capital projects that remedy a potential or evolving safety risk or prevent one from arising in the first place. These projects can include dam safety as well electrical and mechanical plant modernizations that meet contemporary safety and engineering standards.

Environmental and Regulatory Compliance: Improvements and upgrades to our facilities are periodically required to remain in compliance with environmental regulations, permits and the renewal of FERC licenses. An example of compliance-driven expenditures is GMP's Low Impact Hydro Institute (LIHI) certification on several of our hydro facilities. GMP has qualified several additional hydro plants as LIHI certified and will certify additional facilities in the future. In exchange for this certification, these facilities can qualify for additional Renewable Energy Credit ("REC") revenues, which provide an economic benefit to all GMP customers. The generating assets would not be eligible for certification without our constant focus on maintaining compliance requirements at the facilities. This includes, for example, fish passage improvements, bypass flows, and any other requirements that are borne out of State of Vermont water quality requirements, FERC requirements, and PUC rules.

In addition to LIHI certifying facilities, GMP has several facilities in the FERC relicensing process. The relicense process includes various studies that will produce data to be used in GMP's application, and ultimately direct FERC and State regulatory decisions for license conditions as well as process with stakeholders. These new license conditions will govern project operations and provide protection and mitigation measures for environmental, historical, and recreational resources for at least the next 30 years. GMP is currently is a cycle that includes multiple re-licensing of our FERC-regulated hydro facilities.

Furthermore, as owner of critical dam infrastructure, GMP is obligated to assure continued safe and reliable dam operations. FERC has focused heavily on potential failure modes

associated with earthen dams, water control gates and conduits. Additionally, required automation, monitoring and security measures each enhance GMPs ability to more safety operate the numerous dams within our fleet. Thus, our capital plan is heavily focused on dam safety improvements and that will continue be the focus for the foreseeable future. GMP continues to prioritize upgrades and replacement of critical dam infrastructure to meet current industry standards.

Resiliency: Similar to our safety and reliability work, GMP's generation work also focuses on identifying and addressing risks to assets that are particularly susceptible to climate change, focusing primarily on accelerating the pace of upgrades at GMP's high/significant hazard dam facilities based upon updated flood event modeling.

Hydropower generation facility upgrades will be selected to improve GMP's management of high/significant hazard dams, high-water events, and catastrophic event emergency operating protocols. As part of this prioritization, we consider the age of assets/water control equipment; elevation of systems; and effects expected based upon hydraulic and hydrologic modeling will aid in project selection. Priority is given to facilities that have not received electrical modernization to improve safety, reliability, and GMP's ability to both monitor and operate the facilities remotely.

Plant Reliability/Operating Efficiency: Operating and maintaining the fleet of generation facilities efficiently requires strategic capital investments to maintain plant reliability and reduce the risk of unexpected failures that require emergency repairs. Unexpected plant failures cause the loss of cost effective, clean power but also creates unplanned costs. Reliability projects may include work such as replacing bearings, governors, and control systems that are used to operate and manage the various generation assets. They can also include improvements to significant infrastructure like the condition of dams, spillways, and other water conveyance and control structures.

Production Output: Where feasible, the team identifies opportunities to increase power production at existing generation facilities. In the case of hydro, this can mean replacing a runner with a more efficient unit, installing automated pond level controls to optimize flow conditions, or doing complete turbine/generator replacements. In addition, these projects may include improving the required responsiveness of generation units to ISO New England operating commands such as improved SCADA controls and electrical upgrades for automating the power production facilities. Our philosophy is to have the most available, productive and responsive fleet of generating assets we can operate for the benefit of our customer.