Green Mountain Power

Capital Planning Framework

Information Technology

The objective of the Information Technology capital planning process is to create both a roadmap for the deployment of technology-based solutions that serve and benefit the Company's customers, as well as to address and respond to the technical needs of the Company's internal business and operational units through the implementation of hardware, software, and service-based IT solutions.

The IT capital planning process identifies capital projects that deliver value to our customers in several ways:

- Customer Service Improvements
- Operational Improvements
- Capacity Improvements
- Security Improvements

Customer Service Improvements: Projects that improve the customer experience by providing web, smart-phone and application-based services and solutions that improve or enhance the billing process, provide greater access and control via the web, phone and mobile platforms, and provide deeper insight into electricity usage and outage information.

Operational Improvements: Projects that create operational efficiencies through the automation or streamlining of business processes as well as the elimination or reduction of manually performed work. These projects span all operating areas of the organization from back-office functions to field-based grid communications to customer-facing service delivery.

Capacity Improvements: Projects required to meet the evolving, digital needs of our customers and our operations. As our business has digitized and automated the majority of it operating activities, the growth of data, networks, and infrastructure internally, externally in field, plant, and substation locations, as well as in the cloud has grown substantially. Maintaining these systems' capacity and performance is essential to delivering operational reliability to our customers.

Security Improvements: Projects that enhance the physical and logical security of the company's physical, logical, and grid assets, as well as the integrity, confidentiality, and privacy of customer data.

New Technologies: periodically, GMP will invest in new technologies that offer a different, often improved value proposition over an existing technology. While these projects will

typically fall underneath one of the prior four categories as well, at times we may pursue a new technology project for the learning and experience it provides to inform our future planning.

Property & Structures Capital Planning

In order to deliver energy services to our customers, GMP operates statewide with a statewide workforce. GMP maintains 15 district operations locations and 3 administrative facilities throughout the service territory from which local services are delivered. Our objective is to have working spaces that are safe, that create an environment of interactivity and communication among our team members and help our work groups deliver services in a productive and quality manner. The majority of capital projects undertaken in the Property & Structures unit will consist of:

1. Replacing equipment that has either failed, has exceeded its normal life expectancy or is obsolete and can no longer be economically operated or maintained.
2. Accommodating systematic changes (space, adjacency, material, equipment) that workgroups need to function to satisfactorily complete their goals. Accommodations can include modifying/renovating existing spaces, construction of new spaces or purchase and installation of equipment.

Historically, approximately 85% of the capital projects are planned as part of the budget development process and address issues related to category 1 or 2 above. Approximately 15% of property & structures capital projects are emergent and therefore not able to be identified at the time of budget development and approval. These projects are budgeted under a blanket which is built on a 5 year average. The unforeseen emergent projects consist of replacing failed equipment, furniture and racking to meet operational needs and were not able to be predicted.

The Property &Structures process identifies and prioritizes projects to land and buildings in any of the following ways:

- Safety Improvements
- Building Efficiencies
- Compliance with Regulatory Requirements
- Reliability Improvements

Safety Improvements: Projects where a safety hazard has been identified that could result in injury to a GMP employee, customer or visitor. These projects create safe work areas inside and out of facilities that are free from hazards such trip and falls and such as lighting improvements, parking lot paving, roof replacements and constructing storage areas.

Building Efficiencies: Project that reduce GMP's energy consumption. These projects consist of replacement or upgrade to mechanical, electrical and HVAC systems such as replacing all HPS light fixtures to LED and LP unit heaters to infrared tube heaters.

Compliance with Regulatory Requirements: Projects that Property and Structures that are due to new regulatory requirement include life safety equipment (fire alarm & sprinkler Systems), underground oil tanks and storage of hazardous materials.

Reliability Improvements: Projects that are identified by operations that require the purchase of land to either construct a new substation or to expand a current substation. Operations provide a list of future sub expansions that have been prioritized due to age and demand.

Transportation Capital Planning

Transportation Overview:

GMP's statewide operations are supported by a transportation fleet of approximately 550 vehicles and units that span the range of vehicle types, including bucket and digger derrick trucks of 115 units, 7 small boats for hydro facilities, 4 cranes, 20 off-road units, 18 fork lifts, and approximately 160 trailers and over 220 small vehicles. This fleet supports all of our operations, both field and office personnel, including transmission and distribution, power production, meter operations, substation operations, information technology and new initiatives. Much of the heavy equipment, such as bucket trucks, digger derrick trucks and off-road equipment, are operated in rough terrain and varying weather conditions and run long daily duty cycles to perform aerial tasks using hydraulics. The smaller vehicles vary in their use from field designers who meet with customers to scope and design projects to our meter technicians who travel many miles to manage the integrity of our meter operations. Trailers are used to haul poles, carry wire, install and remove wire and other equipment.

Fleet Objective:

To deliver strong value to our customers by supporting GMP operations with safe and reliable vehicles and equipment, striking the right balance between cost and performance.

When deciding whether to replace a vehicle in our fleet, we are guided by a number of factors. First, we continue to employ an aggressive vehicle and equipment reduction effort to ensure our fleet is right-sized to our operations and overall workforce, and balance this against replacing aging vehicles and equipment that are critical to our operations. We generally follow a fleet replacement plan of 8-10 years for large vehicles (like bucket trucks and diggers) and 5-8 years for smaller vehicles (like pickup trucks and pooled vehicles). This replacement standard helps us keep our fleet balanced so that we have a range of newer to older vehicles, and smooths out purchases so we do not need to replace a large number of vehicles at any given time. Each year we evaluate aging units in our fleet, from small pooled vehicles that employees use to travel between districts, to large restoration vehicles, like bucket and digger trucks. We take note of any vehicles that continue to cause expensive and time-consuming repairs or that have safety issues like brake issues or rotting floor pans. Our experienced team of mechanics, working with the primary operator of a vehicle, will evaluate whether it makes sense from a fiscal and safety perspective to keep and repair, or replace an aging vehicle. There are times when the condition of an aged vehicle is acceptable and we keep the unit in our fleet even though it is older and outside our fleet replacement plan. We currently have approximately 70 large and small vehicles in our fleet now that are over 10 years old. Including other vehicles such as trailers and utility vehicles, that number increases to just under 200 units in our fleet that are over 10 years old. Additionally, just because a vehicle needs to be replaced doesn't always mean we replace it with a like-kind vehicle. We sometimes are able to downsize to a smaller vehicle. For example, we recently we reviewed our hydro fleet and removed the Ford F-450 chassis size and reduced to a smaller chassis with a lower gross vehicle weight rating to fit the job and meet the needs of our operators and customers. Sometimes we are able to use a spare vehicle from another district instead of buying a new one. For example, when we

have attrition in a field position, we may have a spare vehicle available for use. Many utilities have even more aggressive vehicle replacement plans, some with 5 years for small vehicles and 7 years for large vehicles like bucket and digger trucks.

Fleet Capital Planning Strategy:

We develop our Fleet Capital Plan by assessing our needs against several criteria:

- Safety: Ensure that our vehicles are safe for travel and operation on public roads for both our employees and the public.
    - We utilize the criteria for State Inspection as well as the guidelines set by the Department of Transportation. Operators perform daily checks of the vehicle and technicians perform overall safety and operational reviews during each scheduled service.
- Age/Reliability Replacement: Age and physical condition of vehicles are also a determining factor. As vehicles age, the probability of failure increases and the repairs become more costly.
    - The current replacement strategy is to replace small vehicles on a 5 to 8 year replacement plan and a 8 to 10 year plan for the bucket, digger and crane trucks. Age is not the only criteria used to determine replacement, mileage and actual physical condition are also some factors used to make our decisions.
    - The final factor in identifying the vehicles to be replaced is the annual cost of maintenance. Our goal is to replace the most costly units to reduce our overall cost.
- Mix of Vehicle Types: Our current fleet is very broad due to the nature of the work being performed. The mix of vehicles in the fleet includes both on and off road trucks and track units, trailers, ATV and small passenger vehicles.
    - The criteria for the mix of vehicles in the fleet is driven by the intended end use of the vehicle. As vehicles are up for replacement, we review alternatives for replacement including the type and size of the vehicle.
- Vehicle New Technologies: The Company continues to replace our existing fleet with the most efficient vehicles available. We continue to look at alternative fuel vehicles and adding them to the fleet where possible and cost effective with the goal of reducing our overall carbon footprint.

New Initiatives: Capital Planning Philosophy

GMP's New Initiatives capital investments are focused on one primary goal: finding and integrating emerging energy technologies into service offerings that can deliver new value to all GMP customers, while also advancing GMP's grid transformation. There are few boundaries to where new initiative pilots and programs can originate. We work to stay current with advances both within and outside the energy sector for opportunities to accelerate the transformation of our energy system on behalf of our customers.

To-date, GMP has introduced a range of new initiative pilots and programs that pursue value in some of the following ways:

- Increase distributed, customer-owned renewable generation with GMP service territory;
- Improve the efficiency and carbon impacts of home heating and cooling energy use;
- Improve the efficiency and carbon impacts of home water heating energy use;
- Improve the convenience, cost and peak demand availability of home backup power systems;
- Improve the convenience, cost and peak demand availability of home EV charging;
- Create an open environment for third party energy devices to be incorporated into peak management events;

A specific example of a new initiative program is GMP's Powerwall 2.0 Pilot Program. Advances in distributed, residential-scale battery systems are the basis for this program and GMP is our technology and implementation partner. Participating customers install a Powerwall 2.0 home battery system as an alternative to a more conventional fossil fuel backup generator, to provide emergency power during a grid interruption. GMP is also able to access the batteries as peak management devices during periods of high cost power, which provides value to all GMP customers in the form of lower GMP operating costs. We are able to deliver these systems to participating customers for $15/month, a price level that reflects the value these devices create thereby guaranteeing the value is delivered to participating and non-participating customers.

Continued identification and development of new initiative pilots and programs is a fundamental element of GMP's grid transformation plan and one of the most important responsibilities we hold as we manage the cost pressures and operating complexities of transforming our energy delivery model.

Green Mountain Power Generation Capital Planning Philosophy

GMP's Power Generation capital planning is focused on improving the Safety, Regulatory Compliance, Plant Reliability/Operating Efficiency and Production Output of Green Mountain Power's hydro, wind and fuel generation assets, as well as our emerging battery storage assets. The power generation planning process looks at best practices and emerging 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. Each year, we typically recommend, justify and perform a number of capital projects that remedy a safety risk or prevent one from arising in the first place. These projects can include the replacement of obsolete or deteriorated plant equipment that may no longer comply with current standards or safety codes, or that may have reduced functionality.

Regulatory Compliance:

Improvements and upgrades to our facilities are periodically required to remain in compliance with permits and licenses. An example of compliance-driven expenditures is GMP's Low Impact Hydro Institute (LIHI) certification on several if 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.

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 create unplanned costs. Strategic investment of this type allows GMP to manage a large fleet of hydro, wind, solar and fuel units with a lean staffing model that has been right-sized since the merger of GMP and Central Vermont Public Service ("CVPS"). 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 and spillways.

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 customers.

GMP's Transmission and Distribution Lines/Substations Capital Planning Philosophy

The objective of our Transmission and Distribution (T&D) Lines/Substations capital planning process is to create a roadmap for implementing the most important projects necessary to safely and reliably deliver power to our customers. GMP's sub-transmission system is an essential element of our grid infrastructure, connecting VELCO's and National Grid's high voltage transmission system with GMP's distribution system in order to serve GMP customers, as well as delivering energy to interconnect points for several of Vermont's other distribution utilities. GMP's distribution system delivers energy directly to our customers, as well as serving as the interconnect point for the growing number of customer-owned distributed generation systems. The T+D planning process identifies capital projects that deliver value to our customers in any of several ways:

- Safety Improvements
- Reliability Improvements
- Efficiency Improvements
- Capacity Improvements
- Compliance with Regulatory Requirements

Safety Improvements: Projects that eliminate or reduce a potential safety incident to GMP's customers or employees. These projects consist of replacing obsolete or deteriorated plant that may not comply with current standards and codes, or that may have reduced functionality.

Reliability Improvements: Projects that will increase reliability by reducing the number of outages, the duration of outages, and/or the number of customers affected by outages.

Efficiency Improvements: Projects for the cost-effective reduction of system losses. These projects include capacitor placements, line re-conductoring, load balancing, circuit reconfiguration, and voltage conversions.

Capacity Improvements: Projects to upgrade facilities in order to avoid thermal overload of equipment. These projects may be the result of load growth or to provide backup capability (improved reliability) for another substation, circuit, or feeder.

Compliance with Regulatory Requirements: Projects required to achieve regulatory compliance or to meet a contractual/tariff obligation. This might include a project that is the subject of a stipulation between GMP and the Department, Agency of Natural Resources or Agency of Transportation (state/municipal road jobs), and projects required by our joint-use and third-party attachment agreements.