

LOWER RESERVOIR

POWERHOUSE ACCESS ROAD

POWERHOUSE

POWERHOUSE

PENSTOCK

TUNNEL

INTAKE STRUCTURE

UPPER RESERVOIR

UPPER ACCESS ROAD

4950

5050

5075

5100

5400

5700

5775

5900

5875

5850

5925

5950

5600

ABSAROKA ENERGY LLC

GORDON BUTTE CLOSED LOOP PUMPED STORAGE HYDRO FACILITY

BRIEFING DOCUMENT

OVERVIEW

THE GORDON BUTTE PUMPED STORAGE HYDRO FACILITY IS LOCATED AT THE NORTH END OF THE CRAZY MOUNTAIN RANGE IN CENTRAL MONTANA

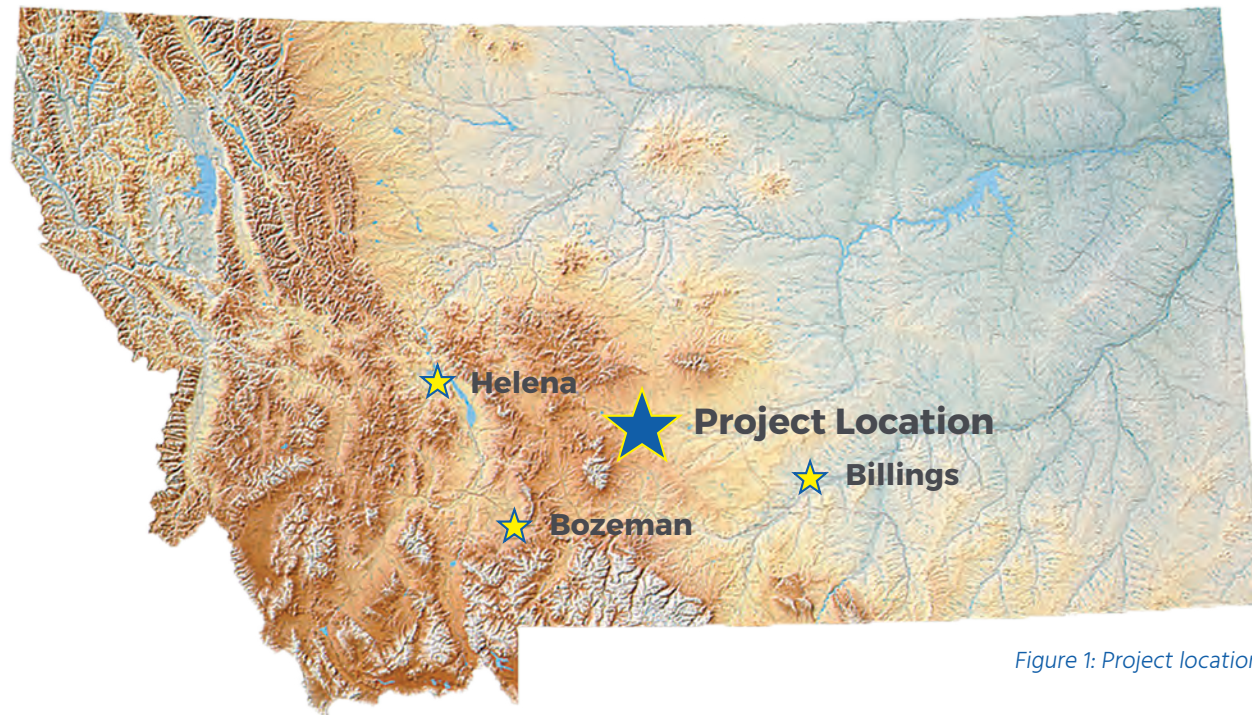


Figure 1: Project location

Montana based, Absaroka Energy, LLC is developing the Gordon Butte Closed Loop Pumped Storage Hydro Project (Gordon Butte PSH or Project), through a single purpose subsidiary, GB Energy Park, LLC (GBEP). The proposed facility will be located on private land in Meagher County, Montana, three miles west of the small town of Martinsdale. The Project is designed to take advantage of the unique geological features of Gordon Butte to create an off stream, closed-loop pumped

storage hydro facility — basically a clean and robust hydro battery. Gordon Butte PSH will interconnect into the Colstrip twin 500 kV transmission lines south of Gordon Butte. Once connected, the facility will provide ancillary services and fast acting flexible capacity to the grid. When commissioned, the Project will facilitate stability, reliability, growth and longevity to existing energy infrastructure and resources in the region.

PROJECT DATA:

- Estimated Average Annual Energy: 1300 GWh
- Estimated Installed Capacity: 400 MW
- Number of Pump / Turbines Pairs: 3
- Two Reservoirs Sized at About 4,070 Acre-Feet Each
- Head (elevation difference between reservoirs): 1,025 Feet

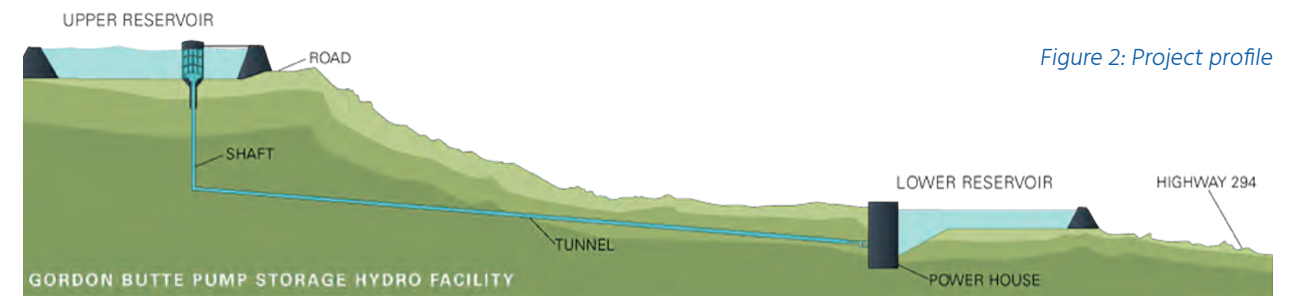
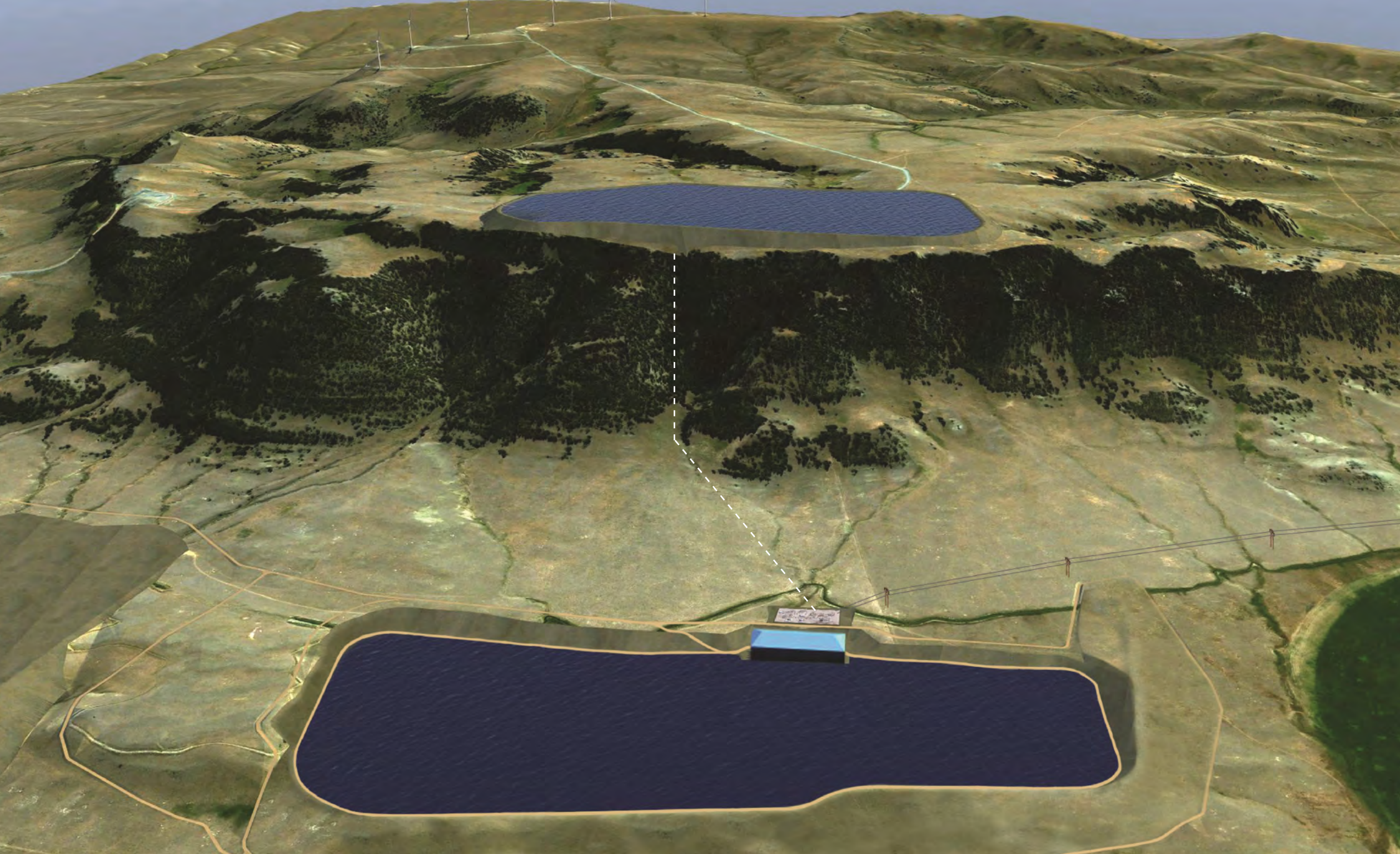


Figure 2: Project profile



An artist rendering of the Gordon Butte Pumped Storage Hydro Project looking from the north.

PROJECT DESCRIPTION AND OPERATION



GORDON BUTTE PSH IS A GREENFIELD DEVELOPMENT SITED ENTIRELY ON PRIVATE LAND

The Project will consist of two new reservoirs, one on top of Gordon Butte and one at the base, connected to one another by an underground concrete and steel-lined penstock (large tunnel). The topographic relief of the butte will result in an elevation difference of approximately 1,025 feet from the upper to the lower reservoir. The reservoirs – which are more like large ponds – will be equally sized at 4,070 acre-feet (or approximately 70 acres of surface area) and lined to prevent seepage. The penstock will terminate at a powerhouse built below grade adjacent to the lower reservoir containing the pump/turbine units.

The Project will connect to the grid with a new 230 kV transmission line running south approximately 6 miles to the Colstrip twin-500 kV transmission lines.

The basic concept of pumped storage hydro is simple – the facility will use cost-effective energy from the grid to pump water to the upper reservoir, storing energy. When energy is needed, water will flow down the penstock and through the turbines. The Project will move water back-and-forth between the two reservoirs 24 hours a day, 7 days a week in response to the daily needs of the grid.

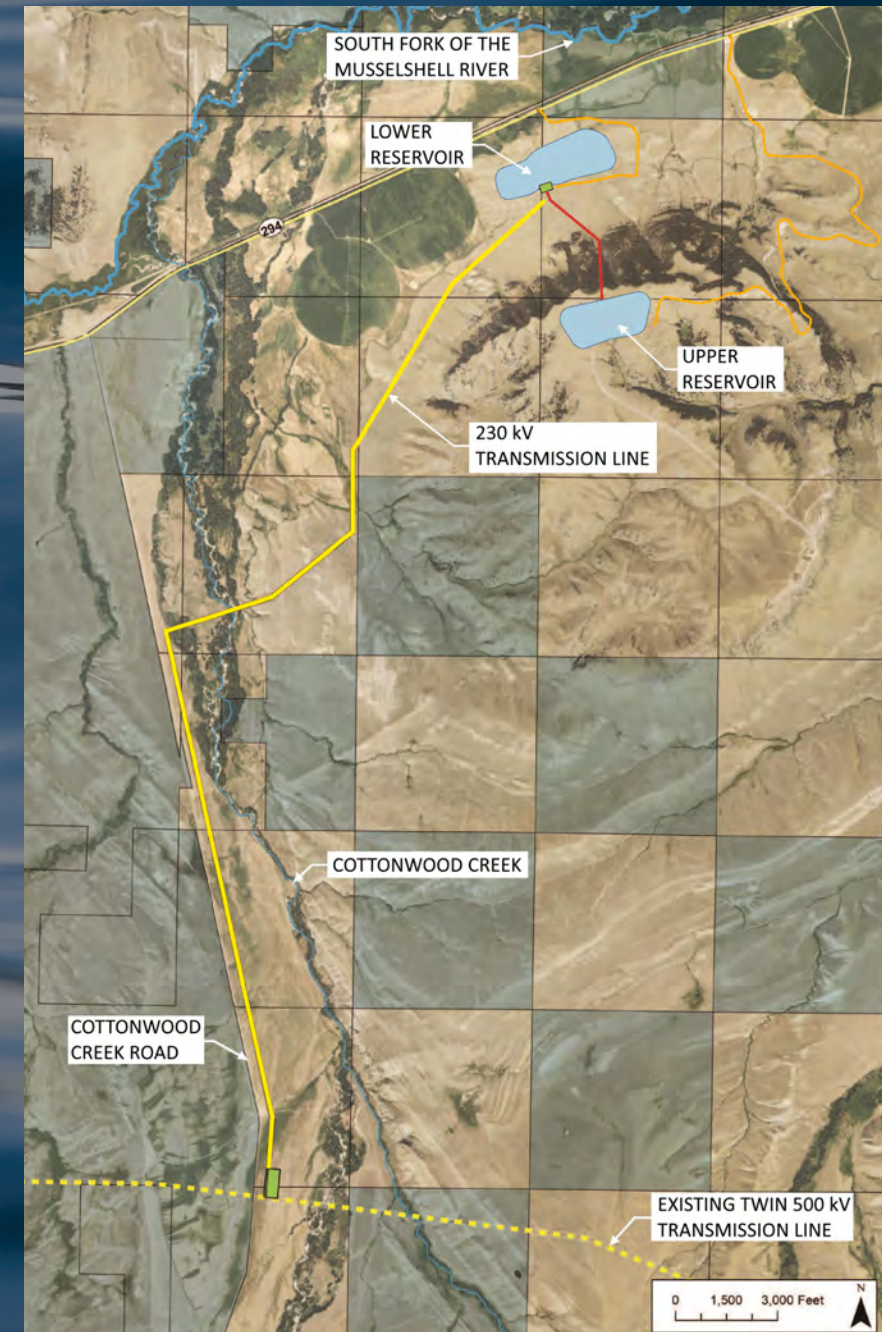


Figure 3: Project overview plan

INTERCONNECTION AND TRANSMISSION

THE PROJECT WILL INTERCONNECT INTO THE MAJOR TRANSMISSION BACKBONE IN THE PACIFIC NORTHWEST

Gordon Butte PSH will connect into the Colstrip twin-500 kV transmission line, which runs from the Colstrip Generation Station in eastern Montana to load markets in Washington, Oregon and California. This line, located approximately 6 miles to the south of the Project, is co-owned by five large regional utility companies – NorthWestern Energy, Puget Sound Energy, Portland General Electric, Avista Corp and PacifiCorp – and forms the transmission backbone of the Pacific Northwest grid.

For decades, Montana has been a net energy exporter and the Colstrip Transmission System is its major link to customers on the West Coast. This line is unique as it terminates at Colstrip power plant without grid interconnection – it is basically a very long and large generation lead line. One of the important advantages of the Gordon Butte PSH is its ability to provide and/or replace the spinning mass (flywheel effect essential for voltage support) needed to ensure the health and longevity of this important system as Montana's generation portfolio evolves.



Figure 4: Project location on Colstrip transmission system



QUATERNARY CONFIGURATION

THE PROJECT WILL BE SIZED AT 400 MW

The Gordon Butte PSH will have a Quaternary configuration which will consist of 3 unit pairs. Each pair will include a pump and a turbine with a dedicated 134 MW motor and 134 MW generator respectively (see Figure 5). This design allows the facility very quick and flexible reaction times. In addition to this innovative arrangement, the powerhouse will have a hydraulic short circuit configuration - basically a hydraulic loop connecting the turbine and the pump utilizing the lower reservoir. Gordon Butte PSH is currently designed to house 3 unit pairs for an installed capacity of 400 MW.

There are many advantages of this type of configuration - the ability to pump and generate at the same time and the ability to seamlessly switch from pumping to generating and back again at an estimated 20+ MW/sec. The operational versatility of these units will allow the facility to offer robust flexible capacity, as well as a wide-ranging suite of ancillary services to maintain the reliability and health of the grid.

Figure 8 on page 12 is a 24-hour operational profile of a single unit at the KOPS II facility in Austria. This facility has developed equipment with a similar operation range and capability as the Quaternary configuration. This figure shows the rapid intra-hour mode changes from pumping to generating, as one of the units "shock-absorbs" load and generation fluctuations on the grid, keeping it stable and reliable.

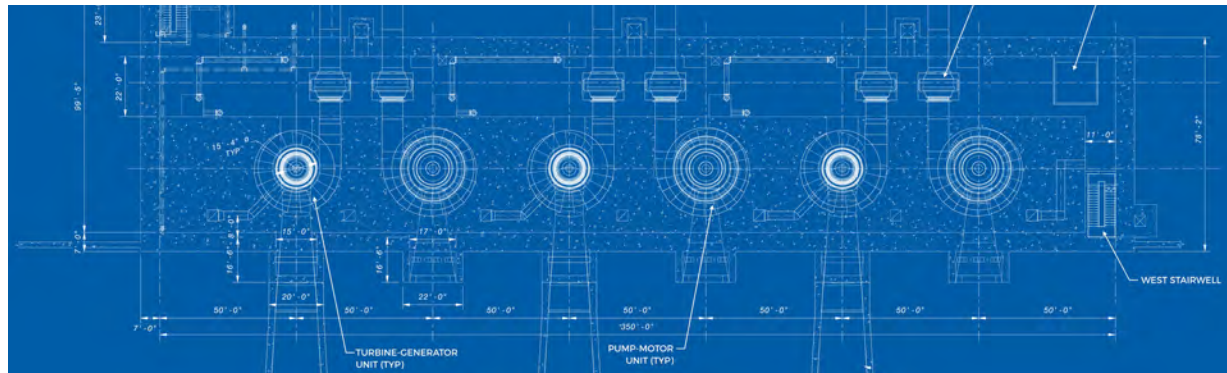


Figure 5: Schematic of Quaternary equipment arrangement

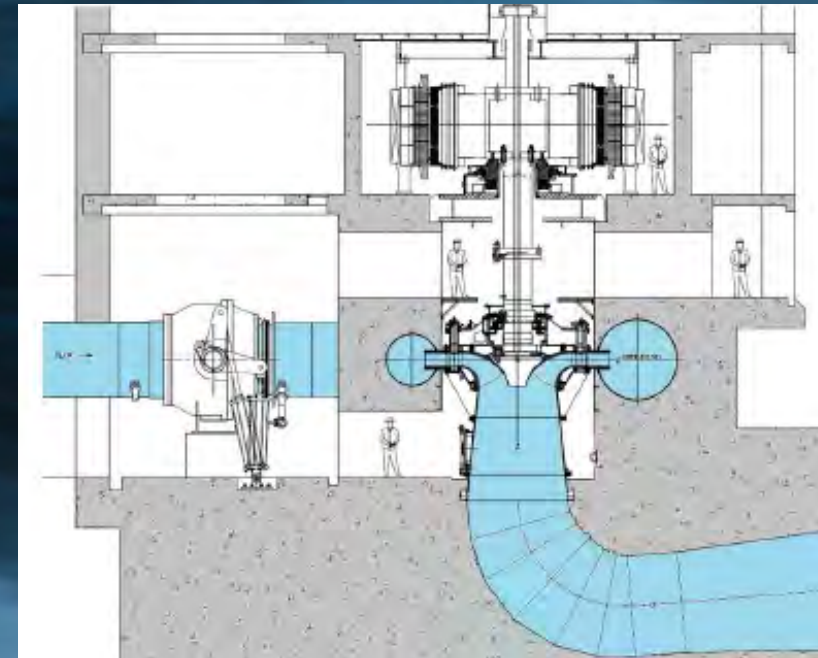


Figure 6: Section view of a single Francis turbine

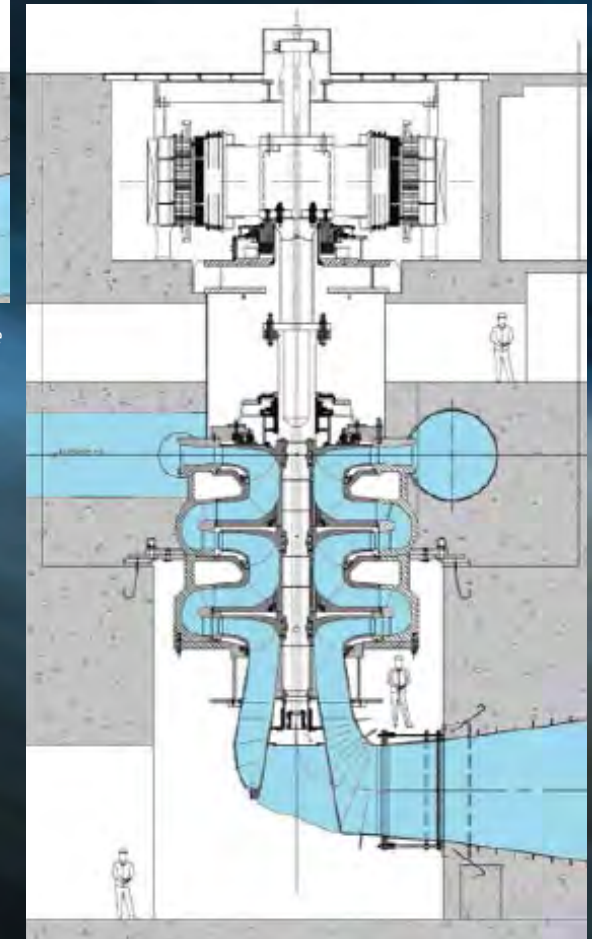


Figure 7: Section view of a single 3-stage pump

INTEGRATING VARIABLE ENERGY GENERATION

AN INCREASING AMOUNT OF THE COUNTRY'S NEW ENERGY PRODUCTION COMES FROM RENEWABLE GENERATION SOURCES SUCH AS WIND AND SOLAR.

Harnessing wind and solar as an energy source has many positive benefits, but the inconsistent nature of these assets make them an extremely variable energy resource. As renewable energy generation becomes more common, the ability to manage the minute-to-minute operation of the system will become increasingly difficult. Therefore, tools must be added that can respond quickly to instant changes in generation and load profiles. Integration of variable energy sources, along with the reorganization of energy trading markets across the Western United States (CAISO and/or Western EIM), has created the need for tools that allow energy to be

stored and moved around the electrical system on a minute-to-minute basis.

Across the globe, modern pumped storage has been deployed as the most reliable, cost-effective tool to manage and integrate variable energy generation sources. These units can ramp up and down quickly thus providing minute-to-minute support to the system. The best-in-class equipment configuration selected for the Gordon Butte PSH will provide these capabilities, at the lowest cost, and keep Montana at the forefront of the ever-changing energy market.

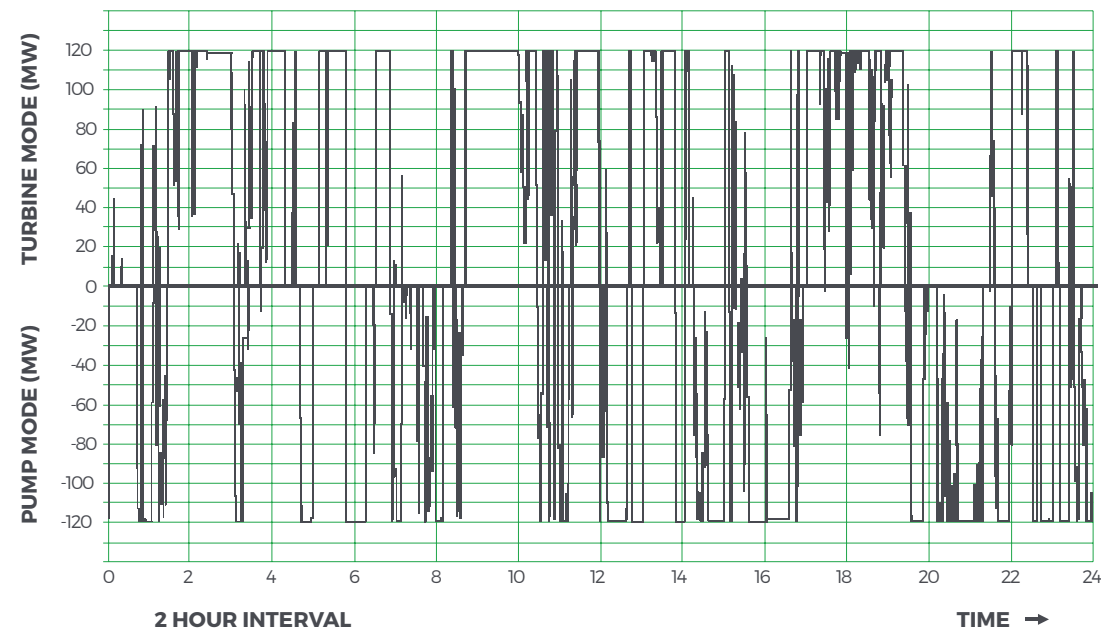


Figure 8: 24-hour operational profile of a single unit at KOPS II in Austria



LAND AND ENVIRONMENT

GORDON BUTTE WILL BE A CLOSED LOOP, OFF-STREAM FACILITY ENSURING A MINIMAL ENVIRONMENTAL FOOTPRINT WHILE SUPPLYING THE GRID WITH CLEAN ENERGY/CAPACITY

The Project is located on private land, part of a large ranch (approximately 50,000 acres) owned and controlled by a single landowner. The careful selection of this Project site ensures that it will not adversely affect any of Montana's protected lands. GBEP has a positive relationship with the landowner and has executed an agreement to acquire the land and easements necessary to build and operate the Project.

Working with state and federal regulatory agencies, as well as other stakeholders, GBEP completed a comprehensive evaluation of potential impacts to environmental resources. These studies included the following resource areas:

- Aesthetic Resource
- Botanical and Wetlands Resources
- Cultural and Historical Resources
- Fisheries and Aquatic Resources
- Geology and Soils Resources
- Recreation and Land Use Resources
- Water Resources
- Wildlife Resources
- Socioeconomic Resources

Based on these studies, FERC, in consultation with state and federal regulatory agencies, has determined there will be no significant impacts to the environment from the construction and operation of the facility.



Figure 9: Artist rendering of the completed Project as seen from Highway 294

WATER

GBEP HAS SECURED A STATE ISSUED WATER RIGHT TO BUILD AND MAINTAIN THE PROJECT OVER ITS LIFETIME

Once the reservoirs are constructed, one reservoir will need to be filled with water prior to operation. GBEP has received a Permit To Appropriate Water (40A 30069150) from the Montana Department of Natural Resources and Conservation, with a priority date of July 30, 2014. This water right will be utilized for the initial fill of the lower reservoir and annual maintenance fills to address losses due to evaporation and seepage (estimate 400 acre-

feet) for the Project's operation. GBEP has executed an agreement with the Project site landowner to utilize existing diversion and irrigation infrastructure for the conveyance of water to the lower reservoir. The Montana Department of Environmental Quality has issued GBEP a waiver on the 401 Water Quality Permit, as there will be no water discharge from the facility.



PUBLIC INTEREST/ HELPING COMMUNITIES

THE MONTANA STATE DEPARTMENT OF COMMERCE ESTIMATES THAT THE PROJECT WILL CREATE HUNDREDS OF JOBS AND CONTRIBUTE SIGNIFICANTLY TO THE STATE AND LOCAL ECONOMY OVER ITS 50+ YEAR LIFETIME

Gordon Butte PSH will create an estimated 350 construction jobs over four years. Once energized, the Project will support twenty to twenty-four, full-time, well paying jobs – injecting direct and indirect revenue into local communities for decades. It will also provide Federal, State, and Local governments with a sustainable tax base over its 50+ year lifetime.



The Gordon Butte Project represents Montana taking a leadership role in defining the nation's energy future. This state-of-the-art facility provides an incredible opportunity to preserve our natural legacy while creating jobs where they are needed most.

– Montana Governor Steve Bullock



DEVELOPMENT PROGRESS

THE GORDON BUTTE PSH HAS CLEARED THE MILESTONES NECESSARY TO BUILD, OWN AND OPERATE THE FACILITY

The project has been moving successfully through the permitting, licensing, design, and stakeholder involvement process. The FERC Docket P-13642 for the Gordon Butte PSH can be found at: <http://elibrary.ferc.gov/idmws/search/fercgensearch.asp>.

The major milestones that have been achieved to date are:

- Land Agreement in Place for Project and Easements
- MT State Issued Water Right Permit Obtained
- 401 Water Quality Certification Waived
- State Historical Preservation Office Signoff – No Cultural or Archeological Issues
- No Endangered Species
- Phase 1 ESA Completed – No Issues
- Front End Engineering Design (FEED) Completed
- Board Of Consultants Initial Review on Conceptual Design Completed
- Interconnect Feasibility and System Impact Studies Completed
- FERC Issued its Environmental Assessment to Meet NEPA Requirements
- GBEP Received an Original License from FERC

GBEP has continued to proactively engage with Local, State and Federal agencies, NGOs, Meagher County Commissioners, Native American Tribes, local landowners, the Montana Congressional Delegation, Montana's Governor and other interested parties throughout the licensing and development effort.

In December 2016, GBEP received a 50-year Original License from FERC to construct and operate the facility (please see FERC on our website home page). GBEP anticipates Project construction will commence in 2020 and, after a four year construction effort, Gordon Butte PSH will be commissioned in 2024.



FOR MORE INFORMATION

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GORDONBUTTEPUMPEDSTORAGE.COM

FERCs involvement with the project can be found on the FERC eLibrary at:
ferc.gov/docs-filing/elibrary.asp using docket number: P-13642





HIGHWAY 294

4950

4975

5000

5025

5050

5075

5100

5125

5150

5175

5250

5350

OVERHEAD
TRANSMISSION LINE

COTTONWOOD CREEK ROAD