



**SIERRA
CLUB**

Sierra Club
West Virginia Chapter
P.O. Box 4142
Morgantown, WV 26504

December 28, 2018

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE,
Washington, DC 20426.

Docket number P-14889-000. Big Run Pump Storage Hydro Project.

Dear Ms. Bose:

Please accept the following comments, on behalf of the approximately 2600 members of the West Virginia Chapter of Sierra Club regarding the preliminary permit for the Big Run Pump Storage Hydro Project (PSH). The proposed PSH has the potential to provide important energy storage capacity that can help balance energy demand with intermittent generation and thereby provide cost-effective grid resilience.

However, the proposed project is located in the Cheat River and Blackwater River watersheds, including lands of the Monongahela National Forest. These areas have been a focus of intense activity for the Sierra Club for many decades. These areas contain important wildlife, recreational, and water resources, thus any project of this magnitude has potential for significant impacts.

While the Club, in general, supports projects that provide energy security and that promote responsible use of renewable energy resources, we also recognize that renewable energy development must be balanced with other important land uses. As such, the West Virginia Chapter has not yet taken a position, pro or con, regarding the proposed project, and we await more complete information on its potential impacts.

We would not be able to support a project such as this unless all relevant information is available for public review, and significant impacts can be properly mitigated.

The following issues must be addressed in planned studies:

1) The proposed PSH project overlies potentially sensitive areas, and includes roads and transmission lines that expand the area impacts. But the application provides few details other than “conceptual” and “preliminary” plans. The planned studies authorized by this permit should analyze the proposed project and must also evaluate **alternatives** that would minimize impacts. Specifically, alternative configurations for the upper reservoir

and alternative routes for the proposed transmission lines, that avoid direct and indirect impacts to Big Run Bog National Natural Landmark, visual impacts to scenic vistas, or suitable habitat for protected species, should be fully evaluated.

2) The application indicates that the PSH project will generate “renewable” energy. Pump Storage projects typically operate using low-cost electricity at off-peak periods to pump water uphill, and the energy is returned to the grid by letting the water flow downhill during peak (high cost) electric demand periods. We do not accept use of fossil-fuel-derived electricity for pumping as being redefined as “renewable” simply because it was used in pump-storage projects, thus it is imperative that the original source of energy is actually a renewable resource. Our concern is that using off-peak generation capacity from fossil-fuel fired power plants could prolong the life of such facilities and thereby exacerbate greenhouse gas and other air pollution emissions. On the other hand, displacing high cost generation during peak demand periods may actually lower the revenue generated by those fossil fuel facilities and shorten their economic life. **The planned studies must clearly identify the original source of energy used.** The studies must include analyses of market forces that would drive use of coal-fired electricity versus renewable sources, impacts to associated coal-fired power plants, and potential impacts on the projected economic life of those plants. The studies must identify whether there will be any contractual assurances that renewable energy would be used or favored by the PSH facility.

3) If fossil- fuel derived energy is used, studies must quantify the air pollution impacts associated with increased emissions from gas- or coal-fired power plants.

4) Studies must also quantify the greenhouse gas emissions associated with the project. These should include lake bed methane, organic matter decay, carbon capture foregone from lost forest growth, as well as reductions in emissions from displacement of fossil fuels and enhanced renewable energy use.

5) The project area is noted for outstanding remote recreation resources. Tucker County generally, and the project area specifically, is a major tourist attraction for the whole region, and offers remote recreation experiences that are increasingly rare throughout the Eastern US. The studies must identify recreation impacts to Blackwater Canyon and associated areas of the Monongahela National Forest. These should include fishing, hunting, kayaking, mountain biking, cross-country skiing, etc. The studies should identify and quantify use of all formal and informal recreational trails in and around the project area. These studies must be conducted by experienced recreation professionals.

6) The studies must include a detailed hydrologic assessment to evaluate effects of the project and identify mitigation for adverse impacts, especially for stream impacts downstream of the impoundments. Include estimates of rainfall and groundwater recharge versus evaporation losses from reservoirs, as well as impacts to flows of receiving streams.

Estimate the daily and annual rise and fall of reservoirs, as well as potential for shoreline erosion and associated water quality impacts.

7) Studies must identify soil erosion control plans and landslide mitigation plans. We recommend that the project evaluate an alternative that avoids disturbance of slopes greater than 35 %.

8) Because parts of the site overlies areas that have been mined, the studies must assess the potential for reservoirs to leach or break out into surface and deep mines, and the potential to disrupt flows of receiving streams, or generate acid mine drainage (AMD). The Blackwater River, in particular, has already experienced substantial impacts from AMD, and the State of West Virginia has incurred significant expense to treat AMD in other portions of this and the Cheat River watersheds. The studies must assess the potential for blowouts, leaching potential through mined or disturbed soils, and the water quality expected in the receiving streams. Studies must also assess the potential for contaminants such as heavy metals, especially iron and aluminum, to leach from spoil piles and abandoned mines, including reclaimed sites.

9) The studies must predict potential for impacts to fisheries especially in Big Run, Mill Run, Blackwater River and Cheat River.

10) The studies must quantify and predict water quality in the upper and lower reservoirs, as well as receiving streams. Parameters should include estimates of impacts to water temperature, dissolved oxygen, pH, conductivity, total dissolved solids, total suspended solids, iron and aluminum.

11) Studies must identify and map each soil and subsurface stratum under the reservoirs, penstocks, other waterways created, associated roads, transmission lines, powerhouse, and all other areas disturbed by the project, or impacted indirectly by disturbance, including soil chemistry, heavy metal content and leachability analyses. The studies should determine the shrink-swell potential for minerals such as those in Mauch Chunk geology. Consider cumulative impacts associated with other anticipated developments, especially Corridor H and its associated developments.

12) The planned studies must evaluate the potential for impacts to ground and surface water associated with herbicide use on the proposed transmission lines, as well as any other treated project facilities.

13) Because it is an ecologically important area, the planned studies must consider both indirect and direct impacts to Big Run Bog National Natural Landmark. The studies should consider alternatives that assure preservation of flora, fauna and hydrology of these significant ecological communities.

14) Studies must fully analyze all listed and potentially eligible Threatened and Endangered species, as well as relevant protected species. The needed surveys should identify all suitable habitat and discuss critical habitat for all listed or eligible plants and animals, both terrestrial and aquatic.

15) Studies must analyze the potential for management practices to avoid invasive species introductions and habitat changes that increase vulnerability to invasive species.

16) Studies must evaluate ways to minimize forest fragmentation and propose methods to mitigate fragmentation impacts, including projects that close roads or other fragmentation corridors in the region.

17) The planned studies must include visual impact assessments of the project, (including the reservoirs, power house, roads, and transmission lines) to tourists, hunters, hikers, backpacking, and wildlife viewing. These should also consider increased visibility to hunters and cross-country skiers during winter when leaves have fallen. At a minimum, these should assess impacts to viewsheds from the Olson Fire Tower, Blackwater Falls State Park, Lindy Point, Canaan Valley State Park, Canaan Valley National Wildlife Refuge, Dolly Sods Wilderness, Corridor H, and Rt 219.

18) Studies must evaluate noise impacts, identifying sources (and noise levels generated), sensitive receptors, and predicted noise levels to any receptors within audible limits (not less than 5 dB BELOW background noise levels during sensitive periods).

19) Studies must include an archaeological evaluation of cultural and historic resources. This should include an evaluation of any sites with potential to be listed on the National Register of Historic Places, and should be done in consultation with US Forest Service and the WV State Historic Preservation Office.

Thank you for considering these comments, we look forward to your prompt response.

Sincerely,

A handwritten signature in blue ink that reads "James Kotcon". The signature is written in a cursive, flowing style.

James Kotcon
Energy Committee
West Virginia Chapter of Sierra Club