February 2, 2016

Honorable Jessica Vega Pederson
Chair, Committee on Energy and Environment
Oregon House of Representatives
900 Court Street, NE
Salem, OR 97301

Nate Sandvig
President
Clean Power Development LLC
PO Box 5734
Portland, OR 97228

Dear Chairwoman Vega Pederson,

As a graduate of the United States Military Academy, I was an Infantry officer and had the honor of serving in Iraq, among other places. In searching for a purposeful and fulfilling career after returning from the war-torn Middle East, developing renewable energy here to keep friends from getting shot at over there was very appealing for all the right reasons — including our national security.

As a proud resident of Oregon and the sustainable use of our natural resources, I am very supportive of HB4036 and a 50% RPS. Of the procurement options available for new generation on an unsubsidized cost of energy comparison, wind energy is one of the most affordable forms of electricity today.

However, the Achilles' heel of wind lies in its variability and uncertainty, making it a difficult resource to dispatch. The challenge is to find a way to balance wind energy and other intermittent resources on a real-time basis.

With the past build-out in primarily located in the Gorge, the Northwest leaned heavily on Bonneville Power Administration and hydropower to integrate all this "must take" wind, but these existing assets are old and at the very edge of their capabilities, needing hundreds of millions of dollars a year to maintain. Also, these leviathans weren't designed to ramp at the speed and frequency wind calls for.

Moving forward, to integrate more intermittent wind, building large-scale storage is critical to maintain reliability of the grid. Combining energy storage with intermittent renewables holds great promise in the Northwest, the next quantum leap in market growth and staggering economic development for the region. Specifically, proven hydroelectric pumped storage can unlock the greater value of existing and future renewables by integrating them cost-effectively without carbon emissions (see enclosures).

In conclusion, utilities need to incorporate proven, cost-effective storage into their integrated resource planning process. Specifically, economic analysis and modeling of sub-hourly energy grid services and environmental benefits at a regional level is necessary to capture the revenue and cost savings these viable, large-scale projects bring both as a generation and load in balancing intermittent renewable energy cost-effectively.

Sincerely,

Nathan Sandvig

Nate Sandvig

PERU

First Hydropower Sustainability Assessment Protocol published for Peru

Hydropower Sustainability Assessment Protocol results have been published for the 456MW Chaglla project in Peru.

The scheme, which is the first project in the country to utilise the IHA's protocol, is now in the final stages of construction. It scored well achieving level 4 or higher on 17 of the 19 sustainability topics against which it was assessed. A score of 5 – the highest possible – represents proven best practice while a score of 3 represents basic good practice.

According to the final report the project's good score was due to its well selected location, good design and small social and environmental footprint. It also exhibited a high degree of corporate commitment to sustainability combined with the scrutiny of international lenders.

Chaglla is being financed by equity contributions from Odebrecht and loans from a number of development and commercial banks, including the Inter-American Development Bank (IDB), Banco Nacional de Desenvolvimento Econômico e Social (BNDES), COFIDE (Development Finance Corporation).

Commercial operations are expected to commence in February 2016. Once commissioned the project will provide up to 456MW to the national grid. It will be the third largest hydroelectric power plant in Peru, generating approximately 6% of the country's power and reducing annual greenhouse gas emissions by an estimated 1.8Mt.

US

Preliminary plans for pumped storage at Columbia Gorge

Clean Power Development has applied for a preliminary permit for the proposed Columbia Gorge Renewable Energy Balancing Project in the US. This 1200MW closed-loop pumped storage facility will be a sustainable brownfield redevelopment of the former Columbia Gorge Aluminium smelter that closed in 2003.

A new lower and upper reservoir, underground water conveyance tunnel, underground powerhouse, 230kV transmission line(s), and other appurtenant facilities will be constructed as part of the scheme. The attractive topography of the Columbia Gorge allows for a gross head of more than 2000ft to be utilised and Clean Power Development says that more energy can be stored using smaller reservoirs, smaller water conveyances, and smaller physical equipment sizes; resulting in lower investment costs and minimal potential environmental impact. As a closed-loop system the project would use the Columbia River for initial fill and periodic make-up water.

The project would provide critical balancing services and flexible capacity to utilities in the Pacific Northwest and California. It is strategically located at the northern terminus of the AC-DC Interties operated by Bonneville Power Administration, Los Angeles Department of Water & Power and the California Independent System Operator which allow for bulk seasonal power exchange between British Columbia, Canada, the Northwest and California.

NEPAL/MALAWI

SMEC awarded new hydro contracts

SMEC has been awarded deals to work on hydropower and dam schemes in Nepal and Malawi.

The company revealed it has been awarded a contract by the Government of Nepal's Department of Electricity Development to provide detailed engineering designs and Environmental and Social Impact Assessments (ESIA) on the 20MW Budhi Ganga hydropower project.

Located on the Budhi Ganga River in the Far-Western Development Region of Nepal, this project is a run-of-river scheme designed to generate an average of 2520GWh per year. The objectives of the project are:

- To increase the electricity generation capacity of Nepal.
- Help meet growing load demands and reduce load shedding.
- Contribute to national economic and social development.

SMEC, in association with Udaya Consultancy, will provide review of existing feasibility and environmental impact study reports; detailed design of all civil works, hydraulic steel structures, electromechanical equipment, transmission lines and substations; and preparation of tender documents.

Meanwhile in Malawi, the company has also been engaged to conduct an Environmental and Social Impact Assessment and prepare a Resettlement Action Plan for the Diamphwe Multipurpose Dam in Lilongwe.

Being built to secure and improve water supplies to Lilongwe City and surrounding areas until 2035, the project will support large-scale irrigation and agriculture, fish farming and livestock production.

Project works comprise the construction of a 25m high RCC dam with a storage capacity of 150,000m^3, a 170m spillway, water supply and irrigation intakes, 80km of pipeline, and a 1000 hectare irrigation scheme.

AUSTRALIA

Garden Island wave powers new scheme

Wave energy developer Carnegie Wave Energy has signed a memorandum of understanding with Western Australia's government power utility, Western Power, to deliver a renewable energy island micro grid project.

The Garden Island Micro Grid Project (GIMG) will be the first such wave-integrated renewable scheme to be connected to an electricity network. The GIMG will consist of the CETO 6 project currently in progress and the existing reverse osmosis desalination plant currently operating on Garden Island. It will also add an additional 2MW of peak solar photovoltaic power generation and sufficient energy storage to allow safe, stable and reliable interaction with the electricity grid.

Carnegie's CEO, Dr Michael Ottaviano said: "Carnegie sees great potential to integrate its world leading CETO wave technology into islands as well as fringe of grid applications wherever there is a strong wave resource. Western Australia presents itself as an attractive option to locate wave power projects in coastal communities and avoid building and maintaining long transmission lines."

"We will provide engineering expertise to assess the technical challenges of enabling a two way flow of power between a large integrated network and a microgrid that has a mix of renewable sources of generation, including wave energy," Western Power CEO Paul Italiano added.

Garden Island is about 10km long, 1.5km wide, lying about 5km off the Western Australian coast.

MOROCCO

EBRD boosts Morocco's hydro power

The European Bank for Reconstruction and Development (EBRD) is increasing its support to Morocco's renewable energy sector with a loan of up to €35M to the Office National de l'Electricite et de l'Eau Potable (ONEE).

ONEE will use the funds to finance a rehabilitation programme of 12 small and medium-sized hydropower plants and the refurbishment of safety elements. It will contribute to the extension of the lifespan of

Is pumped storage on the ropes in the US?

Nate Sandvik shares his views on the barriers that pumped storage needs to overcome before its effective development in the US.

Natural gas is clearly on a path to dominance, making new hydropower too expensive and long to realize for utilities in their integrated resource planning as a realistic option. The current utility "default option" is natural gas for new generation and flexibility – it's cheap and easy now. However, this "bridge fuel," turning into the "destination fuel," is analogous to giving up the donut and trading it for a bagel in terms of carbon content.

With the EPA's Clean Power Plan, their rules curb greenhouse gas emissions in a big way over a number of years. The benefits of this plan have a huge societal benefit in addressing climate change in a significant way. Nationally, the proposed rules target coal plants and impact the Pacific Northwest more than any region in terms of CO_2 emission rate reduction targets.

Big changes regionally will be necessary to meet the goals of the EPA's Clean Power Plan. With the coal plants serving the Northwest currently, there will be a considerable need for low-carbon replacement capacity. Over the next 20 years, PacifiCorp alone is planning to take down 2800MW of coal-fired generation in the West.

Aging infrastructure is another driving factor for retirement, with the average age of these coal plants being over 40 years old.

Growth in wind

With the procurement options available for new generation on an unsubsidized and levelized cost of energy basis, assuming new run-of-the-river hydropower is largely built out, wind energy is one of the most affordable forms of electricity today to meet clean energy and carbon reduction goals. In the Columbia River Gorge in Washington and Oregon, there is a substantial amount of additional wind projects proposed in this rich resource area that can be developed without significant environmental impact.

Historically, the Northwest has seen explosive growth in wind generation over the past decade. Wind generation on Bonneville Power Administration's (BPA) balancing authority in the Northwest grew from almost nothing in 1998, to over 4700MW today.

As a result of this exponential growth, the installed operating wind energy capacity in the Northwest is one of the highest in the country as a percentage of load (15% wind penetration) with the majority located in the Columbia River Gorge representing over a $6 billion clean energy investment and substantial rural economic development.

Unfortunately, new wind project development in the Northwest effectively died several years ago due to California fencing out renewables and the region's Renewable Portfolio Standards largely met. What was left was BPA trying to integrate all this non-dispatchable wind on their system. Still, their transmission interconnection queue currently has over 7600MW in study with over 8000MW likely by 2024.

Energy storage

As a result of this operating "must take" wind capacity, the Northwest's hydropower assets are at the very edge of their capability with little flexibility left for future expansion to integrate additionally intermittent resources. Plus, these hydropower leviathans were not designed to ramp at the speed and frequency necessary to balance this variable carbon-free resource.

While wind energy is one of the most affordable forms of clean energy, the Achilles' heel of wind integration lies in the intra-hour variability and uncertainty of wind, making this resource difficult to dispatch. The challenge is to find a way to make wind energy and other intermittent resources in synch and balanced with load on a real-time basis.

Combining energy storage with intermittent renewables holds great promise for the wind industry in the Northwest and the next quantum leap in market growth. Storage can unlock the greater value of existing and future renewables by integrating them with no carbon emissions. What is needed is bulk carbon-free storage with high operability and flexibility to not only respond quickly when power is needed, but to absorb excess energy in overgeneration conditions.

Of the viable, least-cost storage options available, pumped storage is the ideal grid-scale solution and complementary to batteries on a distribution level. Pumped storage is ultra-mature, proven, and essentially the biggest, cost-effective batteries on the planet with staggering potential for economic development. Albeit, pumped storage projects require a long-view to realize and are upfront capital intensive – 10 plus years and several billion dollars.

A dedicated off-river or "closed loop" pumped storage project such as the Klickitat Public Utility District's JD Pool Pumped Storage Project does not have the operational and environmental restrictions imposed such as the run-of-the-river dams that occur on the Columbia River, and hence, can freely start, stop, reverse, and fluctuate as needed by the power system without negatively impacting the aquatic species, or adversely impact other demands such as food control, fish passage, navigation, irrigation and recreation.

Pumped storage can respond to load changes within seconds and can operate across a broad range of all time scales, from seconds through hours, to days and months, to ensure that sufficient generation will always be available to meet load and match changes in generation and demand on a real-time basis, and on an hour-to-hour and sub-hour time-frame.

Lastly, while this article is focused on the Northwest, the region has major interconnections with California built in the 1960s as a result of the Columbia River Treaty vis-à-vis the AC-DC Interties. With 8,600 MW of export-import transfer capacity, California could be a looming crisis and nightmare for the Northwest or a bold opportunity.

With everyone including "rock star" Elon Musk flogging this now legendary "duck curve" and the need for storage, it's worth analyzing how a pumped storage project at the northern terminus of the interties could provide inter-regional exchanges to solve California's growing oversupply problem.

Just recently, California has become the first state in the nation to top 10,000MW of installed solar capacity in, addition to 3000MW on rooftops. Utility-scale solar is regularly peaking daily at 6000MW. Under a 50% California RPS in 2024, renewables curtailments could reach as high as 13,000 MW or more in April. Many other curtailments could occur in the several 1000's of MW range, particularly in March through June.

There has been a lot of encouraging talk and ink, a large pumped storage project hasn't been built in the US in almost two decades. In realizing a pumped storage project in the US, at the tip of the spear for "barriers to overcome" is the economic analysis and modeling of storage sub-hourly energy grid services and environmental benefits at a regional level to capture revenue and cost savings pumped storage brings both as generation and load in a Balkanized grid with no regional organized market, Independent System Operator or Regional Transmission Organization. Many of these modeling tools have been developed by the Department of Energy's Argonne National Laboratory for California and can be economically adopted by Pacific Northwest National Laboratory for the Northwest region with the proper policy direction and funding. ■

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Public Utility District No. 1 of Klickitat County, Washington	**)**	**Project No. 13333-004**
Clean Power Development, LLC	**)**	**Project No. 14729-000**

REQUEST FOR REHEARING OF
PUBLIC UTILITY DISTRICT NO. 1 OF
KLICKITAT COUNTY, WASHINGTON

Pursuant to Section 313 of the Federal Power Act ("FPA"), 16 U.S.C. § 825l(a), and Rule 713 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("Commission" or "FERC"), 18 C.F.R. § 385.713, Public Utility District No. 1 of Klickitat County, Washington ("Klickitat PUD") respectfully submits this Request for Rehearing of the Commission's order issued on December 23, 2015, in the above-captioned proceedings. *See Order Dismissing Preliminary Permit Applications*, 153 FERC ¶ 62,240 (2015).[1] For the reasons explained in Clean Power Development LLC's Request for Rehearing, filed in the docket for Project No. 14729, the *Order Dismissing Preliminary Permit Applications* concluded in error that the ongoing cleanup activity at the proposed project site was a ground to deny both Klickitat PUD and Clean

[1] Pursuant to 16 U.S.C. § 825l(a) and 18 C.F.R. § 385.713, Klickitat PUD's Request for Rehearing was due on Friday, January 22, 2016. Counsel for Klickitat PUD attempted to file at approximately 9:30 a.m., Pacific Standard Time, on Friday, January 22, 2016, and encountered a notice (Exhibit 1) on FERC's website stating the Commission was not accepting either hard copy or electronic filings due to the snowstorm and closure of the agency. Pursuant to 18 C.F.R. §385.2007, Klickitat PUD filed this Request for Rehearing on the next business day on which the Commission reopened, January 27, 2016.

Power Development LLC preliminary permits for the project. The Commission also erred in concluding that Klickitat PUD failed to demonstrate extraordinary circumstances prevented it from filing a development application by the expiration of its prior preliminary permit. Klickitat PUD respectfully requests that the Commission issue an order granting rehearing and granting Klickitat PUD's successive preliminary permit application.

I. STATEMENT OF ISSUES AND SPECIFICATION OF ERRORS

Pursuant to Rule 713, 18 C.F.R. § 385.713(c), Klickitat PUD submits the following statement of issues and specifications of error:

1. The *Order Dismissing Preliminary Permit Applications* erred in concluding that the project site is part of a contaminated site undergoing an indefinite cleanup process. Both Klickitat PUD and Clean Power Development LLC have submitted ample information to demonstrate that the cleanup process is a well-documented, organized, and definite process that will be completed by the time either applicant starts construction of the project under a new license. *See Green Energy Storage Corp.*, 150 FERC ¶ 61,042 (2015).
2. The *Order Dismissing Preliminary Permit Applications* erred in concluding that Klickitat PUD had not demonstrated extraordinary circumstances and factors beyond its control prevented it from filing a development application before the expiration of its prior preliminary permit. *See Greybull Valley Irrigation District*, 143 FERC ¶ 61,131, at PP 14-15 (2013); *Mokelumne River Water and Power Authority*, 89 FERC ¶ 61,001 (1999).

II. ARGUMENT

1. Cleanup of the contaminated site is definite and will be complete by the time construction of the proposed project begins.

Klickitat PUD and Clean Power Development LLC submitted ample information to demonstrate that the cleanup process involving part of the project site is definite and will be complete by the time either potential licensee starts construction pursuant to a new license. Klickitat PUD adopts the statement of issues, specification of errors, and arguments made by Clean Power Development LLC in its Request for Rehearing of Order Dismissing Preliminary Permit Applications, filed in the docket for Project No. 14729-000 on January 21, 2016. Clean Power Development LLC's Request for Rehearing demonstrates that neither Klickitat PUD nor Clean Power Development LLC should have been denied a preliminary permit on the ground that the overlapping and adjacent contaminated site is subject to an indefinite cleanup process. Instead, the information compiled in Klickitat PUD's Supplemental Information to Preliminary Permit Application filed in the docket for Project No. 13333-004 on November 30, 2015, and in Clean Power Development LLC's Request for Rehearing shows that the owners of the contaminated property and the Washington State Department of Ecology have a definite plan to achieve cleanup with milestones that demonstrate that cleanup will be complete by the time either potential licensee starts construction pursuant to a new license.[2]

[2] *See* Exhibits A & B of Clean Power Development LLC's Request for Rehearing, a complete copy of which is attached as Exhibit 2 to the instant Request for Rehearing; *see also* Klickitat PUD's Supplemental Information to Preliminary Permit Application at 8 (filed December 1, 2015).

If the Commission determines that the information supplied by Clean Power Development LLC and Klickitat PUD shows that the cleanup of the contaminated site is definite and will be completed before construction of the proposed project, the Commission must grant rehearing of its *Order Dismissing Preliminary Permit Applications* and reverse the dismissal of both Klickitat PUD's and Clean Power Development LLC's applications on this ground. Alternatively, if the Commission stands by its conclusion on this issue, both requests for rehearing must be denied.

2. Klickitat PUD faced extraordinary circumstances and factors outside of its control, which justifies granting Klickitat PUD a successive preliminary permit.

In its application for a successive preliminary permit, Klickitat PUD explained that a recent discovery of an active golden eagle nest in the last year of its preliminary permit prevented it from submitting a development application before the expiration of its preliminary permit. *See* Washington & Oregon Congressional Delegation Letter filed in the docket for Project No. 13333 (Dec. 18, 2015) (copy attached as Exhibit 3 to this Request for Rehearing) ("[T]he project's siting between a recently discovered active golden eagle nest and a decommissioned aluminum smelter with waste management obligations has complicated KPUD's effort to file an application. … Thank you for your consideration of our support for KPUD's application."); *see also* Klickitat PUD's Application for Preliminary Permit (Successive) for the JD Pool Pumped Storage Hydroelectric Project at 2 (Project No. 13333) (Nov. 2, 2015) ("[I]n the spring of 2015, the Washington Department of Fish and Wildlife ('WDFW') provided new information on an active Golden Eagle nest in the Project area. The new Golden Eagle information necessitated a relocation and redesign of the lower reservoir, shifting the footprint of the lower reservoir to the east."). In particular, this discovery required Klickitat PUD to

redesign the project, which caused the overlap of the proposed project area with the contaminated smelter site. The very recent discovery of an active golden eagle nest, which resulted in a substantial redesign that implicates the contaminated site described in the previous section, rises to the level of an extraordinary circumstance outside of Klickitat PUD's control.

The Commission should grant rehearing of its *Order Dismissing Preliminary Permit Applications* on this ground as well, and conclude that Klickitat PUD demonstrated extraordinary circumstances that justify granting an additional successive preliminary permit. Because Klickitat PUD has municipal preference and the most well-adapted and advanced application for development of the project, the Commission should grant Klickitat PUD a successive preliminary permit and deny Clean Power Development LLC's application for a preliminary permit. Only Klickitat PUD's proposal, and not Clean Power Development LLC's application, has support from the community as reflected in the letter from the Congressional Delegation.

III. Conclusion

For the foregoing reasons, Klickitat PUD respectfully requests that the Commission issue an order granting rehearing and granting Klickitat PUD's successive preliminary permit application.

Dated: January 27, 2016

Respectfully submitted,

/s/ Kari Vander Stoep

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On Behalf of Public Utility District No. 1 of Klickitat County, Washington

Exhibit 1

FERC
FEDERAL ENERGY REGULATORY COMMISSION

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Closure Notice

Due to inclement weather that has resulted in the Office of Personnel Management closing Federal government offices in Washington, D.C., the Commission is closed and is not accepting submittals – either in hardcopy format or in electronic format through "FERC Online".

When the Commission reopens, it will then accept submittals, in electronic format through "FERC Online", or in hardcopy format at FERC's headquarters.

Please check back at www.FERC.gov to determine when the Commission is again receiving filings.

Return to ferc.gov

Updated: January 22, 2016

Close Window

Exhibit 2

UNITED SATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Clean Power Development LLC) Project No. 14729-000

REQUEST FOR REHEARING OF ORDER DISMISSING PRELIMINARY PERMIT APPLICATIONS

Clean Power Development LLC ("Clean Power") respectfully requests rehearing of the "Order Dismissing Preliminary Permit Applications" issued on December 23, 2015, in the above captioned docket. In support of this Request for Rehearing, Clean Power submits the following Statement of Issues:

I. STATEMENT OF ISSUES

1. Pursuant to 18 C.F.R. § 4.32 and 4.81 of the Federal Energy Regulatory Commission's ("FERC" or "the Commission") regulations, Clean Power Development, LLC ("Clean Power"), a veteran-owned Oregon limited liability company, submitted an adequate Application for Preliminary Permit for the proposed Columbia Gorge Renewable Energy Balancing Project ("Columbia Gorge Project") on November 2, 2015, at 6:50 PM Eastern Time Zone that was filed and accepted by FERC on November 3, 2015, at 8:30 AM Eastern Time Zone.

   Clean Power filed this equally well-adapted Columbia Gorge Project preliminary permit application for the sole purpose of securing and maintaining priority of application for a license under Part I of the Federal Power Act (FPA) to obtain the data, perform the acts, investigations and studies required to determine the economic viability, feasibility at a Resource Conservation and Recovery Act (RCRA) contaminated site, alignment of the construction schedule with the ongoing extensive closed aluminum smelter's clean-up plan for future property redevelopment, and to develop a license application in parallel with the remaining clean-up efforts of the Agreed Order (No. DE 10483).

   Clean Power provided sufficient detail in its complete preliminary permit application complying with the requirements of application content in accordance with 18 C.F.R. § 4.32 and 4.81 for an adequate application. Thoroughly addressing all the issues related to development of the Columbia Gorge Project at a previously contaminated site, including how Clean Power plans to excavate closed landfills and ensuring any required monitoring is considered to be premature at this preliminary permit stage because that work would be related to impacts resulting from or associated with the actual construction and operation of the Columbia Gorge Project, and not with any studies planned under the preliminary permit.

   By FERC issuing an order for preliminary permit and granting priority to file a license application, Clean Power would carry out prefiling consultation early in the permit term as it sizes and microsites the project features, including upper and lower reservoirs, to avoid and minimize impacts with regard to site constraints in order to streamline the studies, development leading to a license application, construction and operation of the project.

Clean Power understands the purpose of the preliminary permit is to foster and encourage new hydroelectric development by affording its holder priority for application (i.e. guaranteed first-to-file status) with respect to the filing of development applications for the affective site. Because the purpose of the preliminary permit preserves prospective applicants such as Clean Power the right of the permit holder to have the first priority in applying for a license for Columbia Gorge Project, it increases the likelihood of encouraging and attracting a broad array of both foreign and domestic investors, sponsors and financial partners into an enterprise that is not 100% "at risk," speculative and reckless. For these ventures, the financing and security of investment in this clean power development on a nonrecourse basis is typically and essential the project itself.

Without the protection, reservation of development rights and exclusivity granted by a FERC preliminary permit for this high-risk early stage development where private capital and equity typically requires some level of project rights, exclusivity, control or ownership to guard against being purloined by another private entity, state or municipality, FERC's dismissal has effectively stymied and crippled one of the most attractive grid-scale storage projects in the United States to balance much higher penetrations of intermittent renewable energy in a decarbonized, reliable grid.

The Commission has effectively precluded any entity taking interest in, and making future investment in, this critically needed clean energy storage technology that requires a long planning horizon and significant capital in developing a massive FERC license application, not to mention the myriad of other project realizing elements costing millions of dollars such as long-term offtake agreements with utilities, interconnection agreements, transmission agreements, financial arrangements, turbine-generating equipment procurement, implementation arrangement, etc. Bottom line, this level of investment requires surety as to site development rights under the permit.

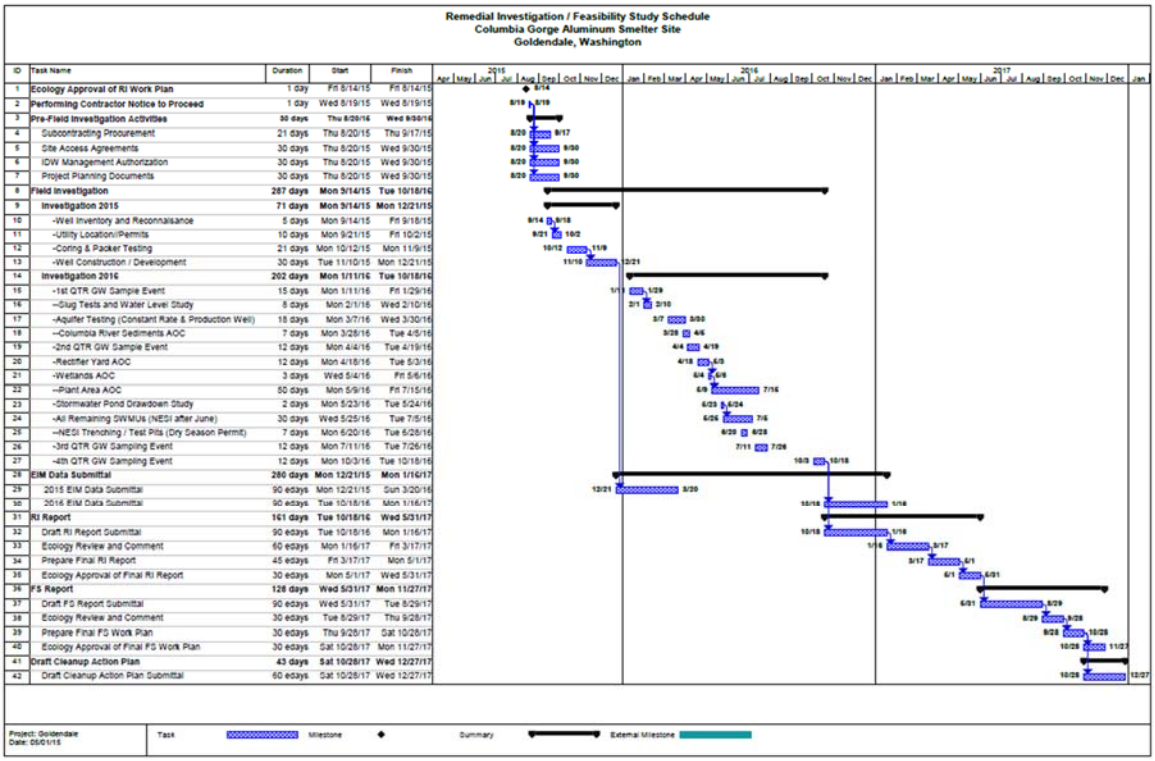
2. Contrary to FERC's order dismissing Clean Power's preliminary permit application for the Columbia Gorge Project due to evidence not available, the site clean-up Agreed Order is not an indefinite and speculative process. Additionally, there could even be opportunities to shorten and accelerate work on overlapping areas of the lower reservoir with that of the clean-up plan, to achieve economies of scale and a win-win for all parties involved, particularly the affected Indian tribes such as the Confederated Tribes and Bands of the Yakama Nation (Yakima Nation).

   While there are investigations and studies required as part of the Agreed Order, they are to fill-in small gaps and fine tune the extensive, comprehensive remedial action plan of a well-characterized site that has been developed with all the key stakeholders and Potentially Liable Persons (PLPs) including NSC Smelter, LLC (NSC), Lockheed Martin Corporation, the Yakama Nation, State of Washington's Department of Ecology (Ecology) and the U.S. Army Corps of Engineers (USACE).

   Clean Power is optimistic about brownfield redevelopment at this competitive site given this is not an Environmental Protection Agency Superfund or Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) clean-up site, rather the site is a RCRA clean-up, and the PLPs are committed to putting this contaminated property back to productive use, particularly the critical regulatory agency, Ecology (Exhibit A, letter from Ecology).

Clean Power believes it is prudent to issue a preliminary permit for the site with certainty and a compatible planning horizon regarding the site's future suitability for development of a hydroelectric pumped storage project. A preliminary permit will provide development certainty to parties Clean Power engages with as it investigates the site for technical feasibility, and economic and financial viability.

Clean Power did not provide information in its application on the RCRA clean-up as it relates to the proposed Columbia Gorge Project because it understood the intent of issuing a permit would allow the applicant the opportunity to coordinate, align, dovetail the clean-up schedule with that of the proposed development schedule in a Pre-Application Document, Draft and Final License Application. Without a preliminary permit to allow further work and investment not 100% "at risk" at this premature stage, the Remedial Investigation and Feasibility Study Schedule from NSC is below. The schedule is realistic and there is nothing foreseeable preventing it from being achieved in a timely manner to allow the construction of the Columbia Gorge Project (Exhibit B, letter from NSC).



Remedial Investigation / Feasibility Study Schedule
Columbia Gorge Aluminum Smelter Site
Goldendale, Washington

ID	Task Name	Duration	Start	Finish
1	**Ecology Approval of RI Work Plan**	1 day	Fri 8/14/15	Fri 8/14/15
2	**Performing Contractor Notice to Proceed**	1 day	Wed 8/19/15	Wed 8/19/15
3	**Pre-Field Investigation Activities**	30 days	Thu 8/20/15	Wed 9/30/15
4	Subcontracting Procurement	21 days	Thu 8/20/15	Thu 9/17/15
5	Site Access Agreements	30 days	Thu 8/20/15	Wed 9/30/15
6	IDW Management Authorization	30 days	Thu 8/20/15	Wed 9/30/15
7	Project Planning Documents	30 days	Thu 8/20/15	Wed 9/30/15
8	**Field Investigation**	287 days	Mon 3/14/15	Tue 10/18/16
9	**Investigation 2015**	71 days	Mon 3/14/15	Mon 12/21/15
10	-Well Inventory and Reconnaisance	5 days	Mon 9/14/15	Fri 9/18/15
11	-Utility Location/Permits	10 days	Mon 9/21/15	Fri 10/2/15
12	-Coring & Packer Testing	21 days	Mon 10/12/15	Mon 11/9/15
13	-Well Construction / Development	30 days	Tue 11/10/15	Mon 12/21/15
14	**Investigation 2016**	202 days	Mon 1/11/16	Tue 10/18/16
15	-1st QTR GW Sample Event	15 days	Mon 1/11/16	Fri 1/29/16
16	--Slug Tests and Water Level Study	8 days	Mon 2/1/16	Wed 2/10/16
17	-Aquifer Testing (Constant Rate & Production Well)	18 days	Mon 3/7/16	Wed 3/30/16
18	--Columbia River Sediments AOC	7 days	Mon 3/28/16	Tue 4/5/16
19	-2nd QTR GW Sample Event	12 days	Mon 4/4/16	Tue 4/19/16
20	-Rectifier Yard AOC	12 days	Mon 4/18/16	Tue 5/3/16
21	-Wetlands AOC	3 days	Wed 5/4/16	Fri 5/6/16
22	--Plant Area AOC	50 days	Mon 5/9/16	Fri 7/15/16
23	-Stormwater Pond Drawdown Study	2 days	Mon 5/23/16	Tue 5/24/16
24	-All Remaining SWMUs (NESI after June)	30 days	Wed 5/25/16	Tue 7/5/16
25	--NESI Trenching / Test Pits (Dry Season Permit)	7 days	Mon 6/20/16	Tue 6/28/16
26	-3rd QTR GW Sampling Event	12 days	Mon 7/11/16	Tue 7/26/16
27	-4th QTR GW Sampling Event	12 days	Mon 10/3/16	Tue 10/18/16
28	**EIM Data Submittal**	280 days	Mon 12/21/15	Mon 1/16/17
29	2015 EIM Data Submittal	90 edays	Mon 12/21/15	Sun 3/20/16
30	2016 EIM Data Submittal	90 edays	Tue 10/18/16	Mon 1/16/17
31	**RI Report**	161 days	Tue 10/18/16	Wed 5/31/17
32	Draft RI Report Submittal	90 edays	Tue 10/18/16	Mon 1/16/17
33	Ecology Review and Comment	60 edays	Mon 1/16/17	Fri 3/17/17
34	Prepare Final RI Report	45 edays	Fri 3/17/17	Mon 5/1/17
35	Ecology Approval of Final RI Report	30 edays	Mon 5/1/17	Wed 5/31/17
36	**FS Report**	128 days	Wed 5/31/17	Mon 11/27/17
37	Draft FS Report Submittal	90 edays	Wed 5/31/17	Tue 8/29/17
38	Ecology Review and Comment	30 edays	Tue 8/29/17	Thu 9/28/17
39	Prepare Final FS Work Plan	30 edays	Thu 9/28/17	Sat 10/28/17
40	Ecology Approval of Final FS Work Plan	30 edays	Sat 10/28/17	Mon 11/27/17
41	**Draft Cleanup Action Plan**	43 days	Sat 10/28/17	Wed 12/27/17
42	Draft Cleanup Action Plan Submittal	60 edays	Sat 10/28/17	Wed 12/27/17

Project: Goldendale
Date: 05/01/15
Task | Milestone | Summary | External Milestone

While preliminary and needing additional study, Clean Power strongly believes any concerns about contamination during project operation can be fully mitigated by removing the closed capped areas and sent to the Chemical Waste Management of the Northwest (CWM Arlington). A clean closure cost estimate was prepared by Parametrix Engineers in 2004, and estimated at $3 to $5 million (Exhibit C, Parametrix document). The final dollar amount depends on how much clean-up will be required after the bottom liner has been removed and how much of possible contaminated soil from underneath the removed containment liner has to be excavated and disposed to CWM Arlington.

While the current cost may be at least 25% higher plus whatever post-closure monitoring network would be required, this cost could most likely be easily absorbed by the Columbia

Gorge Project given its large capital cost. As the FPA intends, under a preliminary permit, this excavation would be further studied and refined as the lower reservoir is micro-sited to avoid, minimize and possibly mitigate environmental impacts.

The map provided in Clean Power's application indicates that the lower reservoir overlays with the West Surface Impoundment (SWMU #4), the Plant Construction Landfill (SWMU #19) and possibly the West Spent Potliner Storage Area (i.e. SWMU#13). While the initial priority of focus and critical path is the clean-up, the greatest challenge for these projects is articulating financially and environmentally the value of energy storage on the power system both as a generation and transmission asset, and FERC should fully support the realization of these cost-effective storage projects by issuing Clean Power a preliminary permit, knowing that it has control and priority of site, to model and value the positive contributions of this proven energy storage technology to a reliable grid.

Accordingly, the Columbia Gorge Project will be defined and right-sized based on economic modeling, cost-benefit analysis, system requirements and market analysis in determining the optimal size and configuration of the reservoirs and power plant. Through these studies it could even be determined that Clean Power could make the project as small as 300MW or less, significantly reducing the size of the lower reservoir and its land use footprint and impact, being sensitive of the identified active eagle nest in the vicinity of the lower reservoir and the contaminated areas. This environmental work cannot be performed unless a preliminary permit to conduct these vital, necessary studies is granted.

3. Clean Power's Columbia Gorge Project preliminary permit application was dismissed simultaneously with the same order dismissing Public Utility District No. 1 of Klickitat County, Washington (Klickitat PUD) second successive (i.e. third) preliminary permit application for the proposed JD Pool Pumped Storage Project No. 13333 (JD Pool Project) on December 23, 2015.

   While both the JD Pool Project and Columbia Gorge Project are closed-looped pumped storage hydroelectric projects and share similar elements given this location's extremely attractive topography, strategic proximity at the northern terminus of the AC-DC Interties to California, and existing Columbia River intake and pumping infrastructure on federal government lands (i.e. USACE), Clean Power's proposal is not the same as Klickitat PUD's third preliminary permit application. The two applicants are not related. Clean Power is a separate and distinct developer with a fresh perspective and a different, better coordinated approach to project development and clean energy project finance.

   Klickitat PUD has had the benefit of six years and successful permits to file a license application. Clean Power believes being lumped together with Klickitat PUD, the Commission has placed a proscriptive, onerous upfront burden of proof and unreasonable standard in providing information about the timing of the site clean-up and how it relates to its Columbia Gorge Project at this initial early preliminary stage.

   Under the Administrative Procedure Act ("APA") (5 U.S.C. § 551, *et seq.*), Clean Power requests clarification on procedural grounds why FERC issued two preliminary permits to Klickitat PUD for the same site but denied an initial preliminary permit application by Clean Power for the Columbia Gorge Project, a private entity. In particular, the APA requires FERC to examine the relevant data and articulate a satisfactory explanation for its action,

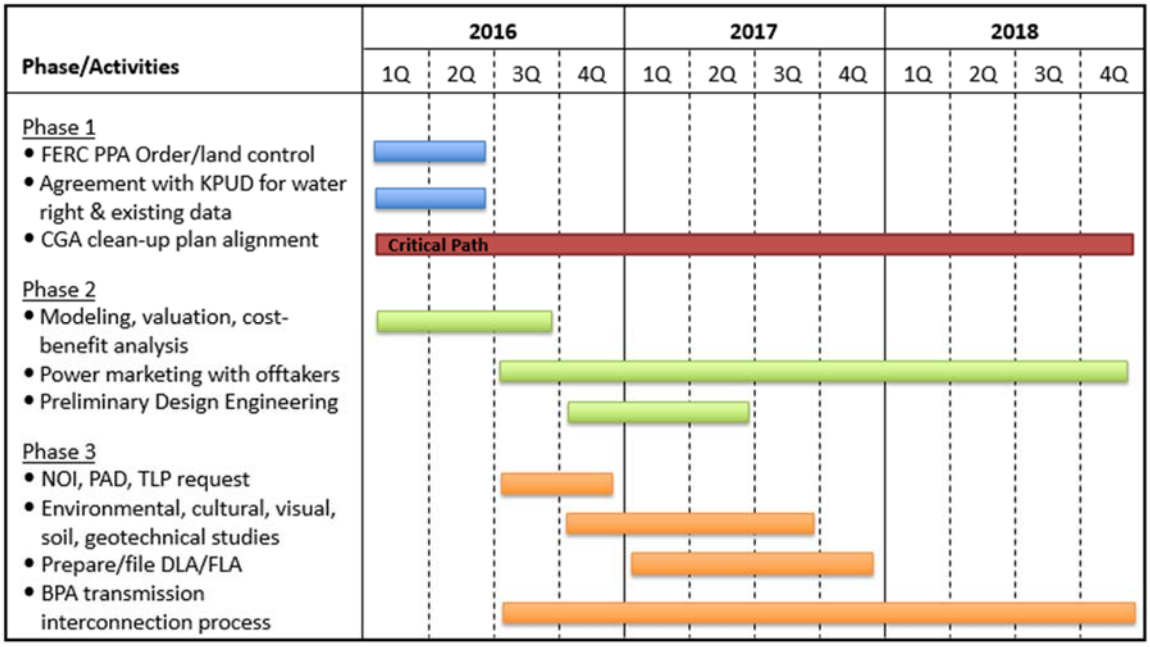
including a rational connection between the facts found and the choice made. *Motor Vehicle Mfr. Ass'n v. State Farm Mut. Auto. Inc. Co.*, 463 U.S. 29, 43 (1983).

FERC's decision in this case runs afoul of this fundamental APA requirement. In particular, FERC has not articulated a sufficient basis for denying Clean Power's preliminary permit application when it previously issued KPUD two successive preliminary permits on facts that are substantially identical to those that exist today. Such disparate treatment requires a reasoned explanation from FERC under the APA, which it has failed to provide.

Upon a FERC order issuing a preliminary permit for the Columbia Gorge Project, Clean Power will diligently and as a priority will focus on providing additional certainty regarding the clean-up schedule and the project construction schedule.

Under a preliminary permit, the clean-up process will not impede progress of Clean Power obtaining the data and performing the acts, investigations and studies required to determine the economic viability, feasibility and develop a license application. On the critical path, Clean Power will act quickly and consult closely with these PLPs and Ecology early in the preliminary permit term to best understand, coordinate, align and prioritize efforts for optimal compatibility and mutual benefit of all parties with the Columbia Gorge Project and the cleanup action plan.

Clean Power would be able to perform any site-specific studies or take any significant steps toward developing a license application during the term of the preliminary permit. Clean Power's work plan and summary schedule on how development would proceed differently than Klickitat PUD is below.



As evidenced by the letters from Ecology, NSC and a completed USACE FOIA request letter (Exhibit D, USACE FOIA), Clean Power has good working relationships and is in discussion with these key stakeholders, private equity groups, institutional investors and project partners already to explore redevelopment at this sustainable brownfield site.

Consultations will begin in earnest with the issuance of a preliminary permit to thoroughly address FERC's concerns regarding the clean-up. "At risk" activities to date, absent a preliminary permit, demonstrate to the Commission Clean Power's commitment in vigorously and diligently moving the project forward in determining viability and feasibility.

The need for grid-scale storage and a reliable power system continues to grow with the increased additions of considerable intermittent renewable energy due to increased state Renewable Portfolio Standards in a more west-west unified transmission system. The importance of the Columbia Gorge Project will help alleviate the burden placed on the Federal Columbia River Power System. These old hydropower leviathans built decades ago are at the very edge of their capabilities in integrating non-dispatchable wind energy in the Pacific Northwest.

From a national priority and federal perspective, a preliminary permit is beneficial to the project in demonstrating priority and site control for an interconnection request with BPA. A preliminary permit will also allow a FERC active project to be fully considered by Department of Energy funding support for not less than $5 million in 2016 appropriated dollars that must be spent in the fiscal year for "competitive demonstrations to assess the commercial viability of new or advanced pumped storage technologies."

II. CONCLUSION

For the reasons expressed above given the scope and complexity of these long lead time and upfront capital-intensive hydroelectric pumped storage projects with strong host government, crucial public and Congressional support, Clean Power respectfully requests that the Commission grant rehearing, vacate the Order and publicly notice Clean Power's accepted Application for Preliminary Permit for the Columbia Gorge Project.

Dated this 21st day of January 2016.

Respectfully submitted,

Nathan Sandvig
President
Clean Power Development, LLC
P.O. Box 5734
Portland, OR 97228
Tel: (971) 229-1949
Email: cleanpowerdevelopmentllc@gmail.com

CERTIFICATE OF SERVICE

I hereby certify that on this day I have served foregoing documents upon each person designated on the official service list compiled by the Secretary in this proceeding via first-class mail.

Dated at Portland, Oregon this 21st Day of January 2016.

Nathan Sandvig
President
Clean Power Development, LLC
P.O. Box 5734
Portland, OR 97228
Tel: (971) 229-1949
Email: cleanpowerdevelopmentllc@gmail.com

Exhibit A

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

January 8, 2016

Nate Sandvig, President
Clean Power Development LLC
8024 SE 35th Avenue
Portland, Oregon 97202

Re: Columbia Gorge Aluminum Cleanup Schedule

Mr. Sandvig,

The Washington State Department of Ecology (Ecology) is working with NSC Smelter, LLC (NSC) and Lockheed Martin Corporation (Lockheed Martin) at the Columbia Gorge Aluminum Smelter Site (Site) under Agreed Order No. DE 10483 (effective May 1, 2014), and pursuant to the Model Toxics Control Act (MTCA), Chapter 70.105D RCW. This order requires NSC and Lockheed Martin to complete a Remedial Investigation (RI), Feasibility Study (FS), and draft Cleanup Action Plan (dCAP) at the Site located at 85 John Day Dam Road near Goldendale, Washington.

Clean Power Development LLC has proposed construction of a pumped storage hydroelectric project (JD Pool) at the location of the former aluminum smelter and has asked Ecology to provide clarity on the schedule for the cleanup work. The proposed location of the Lower Reservoir for this project appears to impact the closed West Surface Impoundment (SWMU #4) which contains fluoride and sulfate, and the Plant Construction Landfill (SWMU #19) which contains general construction debris. It is our understanding that construction of the JD Pool project is projected to commence in 2020 if approved.

The remedial investigation of this Site began August 2015 and is currently expected to be completed January 2018. The Feasibility Study will then be written and is expected to become final in July 2018. The last deliverable under the Agreed Order is the dCAP which is now expected to be submitted to Ecology by August 2018.

The MTCA process following this work includes negotiation of a consent decree (CD) and holding a public comment period on the dCAP and CD. A responsiveness summary based on public comment, an engineering design report, and construction of the selected remedy will follow. The schedule for these final steps will depend on the findings of the RI/FS, the selected

remedy, and the level of cooperation with NSC and Lockheed Martin. Generally these steps may take 2-3 years.

Cleanup and redevelopment of brownfield properties is important for both environmental protection and economic development and Ecology is committed to working with site owners and liable parties to put contaminated property back to productive use as soon as possible. Based on our understanding of your anticipated timeline Ecology believes the cleanup could be successfully coordinated with the JD Pool project.

Please contact me at (360) 407-6999 or guy.barrett@ecy.wa.gov if you have questions or need additional information.

Sincerely,

Guy Barrett

Guy Barrett, LHG
Site Manager
Industrial Section
Waste 2 Resources Program

By Certified Mail #91 7199 9991 7033 1166 1822

cc: Garin Schrieve, Ecology
Kim Wigfield, Ecology
Tom Tebb, Ecology
Bill Bath, Lockheed Martin Corporation

Exhibit B

January 15, 2016

NSC Smelter, LLC
Scott Tillman, President
3313 West Second St.,
The Dalles, OR 97058

Nate Sandvig, President
Clean Power Development, LLC
8024 SE 35th Avenue
Portland, Oregon 97202

Re: NSC Smelter LLC Response to FERC on Pumped Storage Project Preliminary Permit Application Dismissal

This letter is to provide additional information on the ongoing past, present and future extensive clean-up activity as related to the Agreed Order deemed by Federal Energy Regulatory Commission (FERC or Commission) as uncertain and speculative in support of a pumped storage project at the site of the former aluminum smelter given FERC's incomplete and inadequate assessment leading to dismissal of the preliminary permit applications.

AGREED ORDER

Effective May 1, 2014, Washington State Department of Ecology (Ecology) entered into an Agreed Order (Order) with NSC Smelter, LLC (NSC) and Lockheed Martin Corporation (Lockheed Martin) with the objective of providing remedial action at the closed Goldendale, WA aluminum smelter (Facility). This Order requires Lockheed Martin and NSC as Potentially Liable Persons (PLPs) to develop Remedial Investigation Work Plan, conduct a Remedial Investigation/Feasibility Study (RI/FS), and develop a Draft Cleanup Action Plan (DCAP) for the smelter location. The impacted property includes approximately 7000 acres of contiguous NSC property of which 350 acres had been in active use and zoned industrial. Ecology has determined certain wastes and constituents found at the Facility are dangerous wastes and/or constituents, and believes the actions required by this Order are in the public interest.

Harvey Aluminum began plant construction in 1969. After plant start up in 1971, there were several facility ownership changes: Martin Marietta Corporation (1971-1985), Comalco Holding, Inc. (1985-1987), Columbia Aluminum Corporation (1987-1996), and Goldendale Aluminum Corporation (1996-2005).

In January 2005, a Chapter 11 bankruptcy of reorganization was presented to US Bankruptcy Court, and subsequently all company assets and liabilities were transferred to NSC as of April 2005. From 1981 up to 2016, the facility has been subject to Resource Conservation and Recovery Act (RCRA) permitting requirements initially due to storage of Spent Potliner (SPL), and later in 1984, due to the treatment and storage of SO_2 scrubber wastewater in East Surface Impoundment (ESI) and West Surface Impoundment (WSI). A final status permit has not been issued and the Facility continues as a RCRA interim status facility, not a complex, multi-phased

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund site.

A considerable amount of effort and millions of dollars has been invested by the PLPs in the clean-up efforts to date resulting well characterized site with a considerable amount of background information and an Order that is well beyond the beginning. Starting in 1987, Ecology conducted Preliminary Assessment/Site Investigation and a report was completed in 1989. Ecology identified 32 Solid Waste Management Units (SWMU) which are discernible locations where solid wastes have been placed anytime including spills. WSI (i.e. SWMU#4), and West SPL Storage area (i.e. SWMU#13) are two significant units in close proximity of the pumped storage project lower reservoir. Drum Storage Area, Wood Pellet Storage Area, Construction Rubble storage area, and Plant Construction Landfill are additional SWMUs in the general lower reservoir area. However, they are deemed to be already cleaned or of insignificant impact.

FERC'S DIMISSAL OF PRELIMINARY PERMIT APPLICATIONS

On December 23,2015, Federal Energy Regulatory Commission issued an Order dismissing Preliminary Permit Applications of Klickitat PUD for the JD Pool Pumped Storage Project and Clean Power Development, LLC's (Clean Power) Columbia Gorge Renewable Energy Balancing Project.

In their applications, both Klickitat PUD and Clean Power had explained that the proposed lower reservoir site for their projects is currently undergoing a cleanup process. The Commission stated that it had previously found it not prudent to issue permits for contaminated sites undergoing an indefinite cleanup process. Commission held that due to their perceived speculative nature of the cleanup timeline and uncertainty regarding the site's future suitability for development, it finds it not prudent to issue a preliminary permit.

NSC COMMENTS FOR PETITION FOR FERC REHEARING

1. Ecology's Order and associated remediation is realistic and doable. Lockheed Martin and NSC's sister company Northwest Aluminum Company (NWA) in recent years completed the cleanup of an aluminum smelter in The Dalles, OR. Both NSC and NWA smelters were of the Soderberg smelter design, and with similar environmental issues. The successful completion at this site not only earned the No Further Action (NFA) from Oregon Department of Environmental Quality, but additionally, it is in contract to be sold and expected to be redeveloped within the next 12 months. This example and result clearly demonstrates NSC can go from a standing dirty smelter to remediated land ready for future use. The common PLPs have the experience to mitigate the Goldendale site for similar brownfield redevelopment on compatible timeline to allow the proposed development of a pumped storage project.

   Tetra Tech Inc. will be overseeing Order activities at Goldendale. Tetra Tech is a leading provider of consulting, engineering, program management, construction management, and technical services. This company supports government and commercial clients by providing

innovative solutions focused on water, environment, energy, infrastructure, and resource management. With 13,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle and provide certainty in delivering this project within the planned schedule.

2. During operations, Goldendale smelter's environmental performance was noteworthy. Its technology and achievements were classified as the Maximum Achievable Control Technology (MACT) standard for other Soderberg smelters in the US.

   Since its startup in 1971, Goldendale always acquired and maintained the latest environmental equipment in environmental management (Order Exhibit B). In the late 1970's, it was the first world Soderberg smelter in acquiring advanced Japanese smelting technology with a goal of significantly reducing carbon and fluoride emissions and in reducing plant effluent to Columbia River. The technology also helped extend smelter cell life at Goldendale from 1500 days to over 2900 day, and thereby reducing SPL generation.

   Additionally, Goldendale emphasized and achieved great success in reducing plant wastes. For example, spilled bath chemicals were collected and processed through an employee designed recycle system and put back in the cells. This state of the art recycle center was purchased in 2013 by an operating east coast smelter. Other activities included reduction of contaminated scrap steel, engine oil recycle, etc.

   In mid-1987, Ecology conducted facility Preliminary Assessment/Site Investigation(PA/SI). The study placed the smelter with a ranking of 3 on Ecology's Site Register. Sites with a ranking of 1 are the state's highest priority and 5 the lowest priority. The site did not rank high enough to be placed in the federal Superfund National Priorities List under the jurisdiction of the Environmental Protection Agency (EPA) by CERCLA.

3. It is worthy to mention that the current Order plan is not starting from scratch, but as Ecology has commented themselves during the 35-year life of the Facility, the various owners have successfully managed hazardous and non-hazardous solid wastes at several locations onsite. In Exhibit C, Ecology provides details regarding the 32 SWMUs which it has been tracking. Some of the significant SWMUs have already been rectified at great cost and under Ecology oversight. The lower PSP reservoir in the vicinity of WSI (i.e. SWMU #4) and West SPL Storage Area (i.e. SWMU #13) are two such areas which have been successfully closed in the past.

   WSI was constructed in 1981 as part of a major smelter expansion, modernization, and pollution control program. It was closed under RCRA. WSI historically received state-only dangerous wastes. Under the new Ecology bioassay criteria, the WSI wastes would not designate as dangerous. A RCRA groundwater monitoring program has been conducted at this unit.

   West SPL Storage Area was operated between 1984-1988, and then it was closed as a Solid Waste landfill under applicable regulations for solid waste. Monitoring wells on the west side of the storage area show elevated cyanide values that are below MTCA ground water standards.

All in all, the Goldendale facility was one of the better smelters of its kind during the operational period. Using past performance as a predictor of future performance, during 35 years of its life, many remediation projects were successfully completed. The current RI/FS/CAP activities will provide more insight into what additional actions might be necessary. However, as an active stakeholder with an ownership interest in the clean-up, NSC does not concur with FERC on their speculative and uncertain characterization. The ongoing remediation efforts of the past 35 years with abundant documentation, full time Ecology oversight has already achieved and clarified much. We anticipate that the Action Plans developed in 2017 will result in a remediated site signed by Ecology sometime in 2018. It is also our belief that the lower reservoir area will not require noticeable changes as a result of the study.

Sincerely,

Scott Tillman

President

NSC Smelter, LLC

Exhibit C

West Surface Impoundment Closure and Post-Closure Plan

Prepared for

Goldendale Aluminum Company
7710 NE Vancouver Mall Drive, Suite 6
Vancouver, Washington 98662

Prepared by

Parametrix
1231 Fryar Avenue
P.O. Box 460
Sumner, Washington 98390-1516
(253) 863-5128
www.parametrix.com

November 2004
Project No. 215-3244-005 (01/01)

4.2 POST-CLOSURE REQUIREMENTS

WAC 173-303-610(7) requires that post-closure care and use of property must begin after completion of closure of the unit and continue for 30 years after that date, and must consist of at least the following:

- Groundwater monitoring and reporting.
- Maintenance and monitoring of waste containment systems.

Per WAC 173-303-650(6)(b), during post-closure, the owner or operator must:

- Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.
- Maintain and monitor the groundwater monitoring system.
- Prevent run-on and runoff from eroding or otherwise damaging the final cover.

These requirements will be met through groundwater monitoring as described in Section 5, and maintenance and monitoring of the surface impoundment cover system.

Section 8 provides the WSI Post-Closure Plan. If changes to the Post-Closure Plan are required, Ecology will be notified and an amended plan will be submitted to Ecology.

4.3 CLOSURE OPTIONS CONSIDERED

Potentially feasible methods for closing the WSI include clean closure, treatment with closure in place, and closure in place. Methods commonly used for treating or removing organic compounds, such as biodegradation, incineration, soil washing, and vacuum/steam extraction are not considered feasible for the WSI because the waste is predominantly inorganic.

4.3.1 Clean Closure

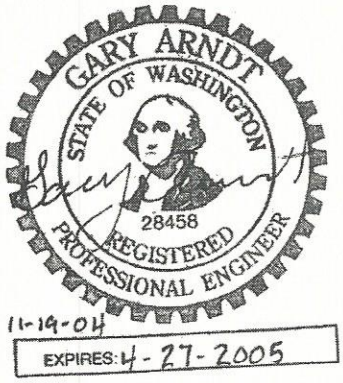
Clean closure involves removal of the waste to another location, and excavation of potentially contaminated soil beneath the WSI. Steps in the process of clean closure would include dewatering, waste characterization, removal (excavation) of waste, removal of the geomembrane lining, sampling and testing of soil beneath the WSI, excavation of any contaminated soil, possible groundwater remediation, and groundwater monitoring.

A significant disadvantage of clean closure is the high cost relative to closure in place. A preliminary estimate indicated that clean closure, assuming disposal of the sludge and subsoils at an off-site commercial landfill as solid waste, would cost approximately $3 to $5 million, whereas closure in place would cost approximately $2.5 million plus present worth post-closure costs of approximately $373,000 (see Section 9).

Another disadvantage is the potential spread of contamination that could result from the sludge removal, transportation, and placement in a landfill. The fine particles in the WSI sludge could be windblown as the sludge is handled.

CERTIFICATE OF ENGINEER

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



Prepared by Kenneth T. Fellows, P.E.

Checked by Gary Arndt, P.E.

Approved by Richard A. Burkhalter, P.E.

Exhibit D

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
PO BOX 2946
PORTLAND OR 97208-2946

December 4, 2015

Office of Counsel

Clean Power Development, LLC
Mr. Nathan Sandvig
PO Box 5734
Portland, OR 97228

By email:sandvign@gmail.com

Re: Freedom of Information Act Request No. FP-16-0011737

Dear Mr. Sandvig,

This letter responds to your request to the Portland District, U.S. Army Corps of Engineers ("District") under the Freedom of Information Act (FOIA), 5 U.S.C. § 552, as amended, received by email on October 20, 2015 and perfected November 9, 2015 for an electronic copy of "Department of Army lease number DACW57-1-69-75 and any subsequent agreements related to using existing pumped facility for a proposed hydroelectric pumped storage project on USACE land."

The District has performed a thorough search and identified records responsive to your request: DACW57-1-69-75, including Supplemental Agreements 1 and 2, and Exhibits A, B and C.

Due to email and server size limitations, you will receive an email from SAFE (U.S. Army Safe Access File Exchange) containing a link and a one-time-use password to access the files. Clicking on the link will take you to a page where you will be asked for the password. The best way to enter the password is to copy it from the email and then paste it into the password box.

After logging in, you will be able to download the files. We recommend right-clicking on the file and selecting the "Save Target As" option to select the location to save the file to. After downloading the file, you will not be able to log back into SAFE to download the files again.

Because search and review times were minimal, we have waived the fees incurred in processing this request.

Sincerely,

Heather A. Hall
District FOIA Officer

Exhibit 3

P-13333

United States Senate

WASHINGTON, DC 20510

December 18, 2015

The Honorable Norman Bay
Chairman
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Chairman Bay:

We write to express support for the Public Utility District No. 1 of Klickitat County, Washington (KPUD), in its request for a second successive (third overall) preliminary permit for the JD Pool Pumped Storage Project (originally FERC No. P-13333). A large pumped storage project like the JD Pool project could significantly ease the development and integration of more intermittent renewable energy in the Pacific Northwest and elsewhere.

We are mindful of the importance of avoiding site banking and of the related standards that FERC has adopted for reviewing successive permit applications. At the same time, we do not believe that the two-year limit on permit extensions under section 5 of the Hydropower Regulatory Efficiency Act of 2013 controls in this case because KPUD's outstanding application is for a new permit. In our view, KPUD's need to obtain a third permit is directly related to the scope and complexity of the proposed project. We also note that KPUD's six-month progress reports under the preliminary permit that expired on November 2, 2015 indicate good faith and reasonable diligence to file a formal license application in a timely manner.

While most hydropower projects face complicated siting, consultation, and financial hurdles, the unique circumstances of this large project deserve your due consideration. In particular, the project's siting between a recently discovered active golden eagle nest and a decommissioned aluminum smelter with waste management obligations has complicated KPUD's effort to file an application. We hope, through cooperation with the Washington State Department of Ecology, that the siting challenge can be resolved shortly. In addition, the banks of the lower Columbia River are a zone of complex tribal rights. We look forward to KPUD carrying out the appropriate cultural consultations with the Confederated Tribes and Bands of the Yakama Nation and other tribes and stakeholders as necessary. This consultation is a necessary condition of moving forward with the project, and its outcome may materially affect the project.

Thank you for your consideration of our support for KPUD's application.

Sincerely,

2015-280

Ron Wyden

Dan Sullivan

Jaime Herrera Beutler

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served this 27th day of January 2016 upon each person designated on the official service list in Project No. 13333 and Project No. 14729 in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010:

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Nathan Sandvig
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PO Box 5734
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UNITED STATES
cleanpowerdevelopmentllc@gmail.com

/s/ *Kari Vander Stoep*
Kari Vander Stoep
K&L Gates LLP

On Behalf of Public Utility District No. 1 of Klickitat County, WA