Avista Corporation
Request for Independent Evaluator Services

Submittal by

Sapere Consulting

June 21, 2021

Table of Contents

June 21, 2021

Delivered via e-mail to: Chris Drake (Chris.Drake@AvistaCorp.com), Kevin Holland (Kevin.Holland@AvistaCorp.com)

Subject: Proposal – IE Services

Sapere is pleased to offer this proposal to Avista Corporation ("Avista") addressing Avista's request for proposals for an Independent Evaluator ("IE") for your 2021 All Source Request for Proposals ("All-Source RFP").

Sapere has supported clients on resource RFPs and acquisition efforts and are well-qualified to provide these services to Avista. Two specific examples, NorthWestern Energy's Community Renewable RFPs and PacifiCorp's 2017 Wind RFP are highlighted in Section III below. We understand Avista's need to start working on this project soon and we are prepared to commence work on your behalf as soon as possible.

Please contact me if you would like to discuss our proposal further or would like to start the contracting process. We look forward to hearing from you.

Sincerely,

Steven E. Lewis
Energy Strategies Practice Lead
Sapere Consulting, Inc.

slewis@sapereconsulting.com
(206) 726-3695

I. Participant Information

Sapere Consulting, Inc. ("Sapere") is a 23-person firm headquartered in Walla Walla, Washington, with area offices in Spokane and Seattle, Washington, Chicago, Illinois and Washington D.C. Sapere is a multi-disciplinary consulting firm providing integrated solutions to complex problems. Sapere provides services through three practice areas:

Energy Solutions Practice
Sapere's Energy Solutions Practice experts leverage their experience and knowledge with creativity and hard work to help clients thrive as competition increases and a renewable and de-carbonized smart grid becomes reality.

Digital Transformation Practice
Sapere's Digital Transformation Practice delivers advanced technology solutions to our clients. We offer experts in architecture and development who evaluate client needs and build solutions, as well as experts in product management who work with clients to professionally define and manage any technical project. We work with Sapere's Organizational Transformation Practice to ensure our technical work is implemented quickly, elegantly, and meaningfully.

Organizational Transformation
The Organizational Transformation Practice designs and leads change in planning, analysis, and decision-making processes for our clients. Our diverse experience coupled with our ability to quickly understand our clients' unique systems, processes, and culture enables us to develop solutions tailored to our clients' requirements and desired outcomes.

Sapere Contact Information:

Company Name:	Sapere Consulting, Inc.
Mailing Address:	103 East Main Street Suite 301 Walla Walla, WA 99362
Webpage:	sapereconsulting.com
Contracting Point of Contact:	Kim Pietrok Chief Financial Officer kpietrok@sapereconsulting.com contracts@sapereconsutling.com (509) 529-7885
Project Point of Contact:	Steve Lewis Energy Strategies Practice Lead slewis@sapereconsulting.com (206)726-3695

Sapere Consulting is a United States Corporation founded in 2003 in Washington State.

II. Experience and Capabilities

The following short biographical sketches provide a summary of each of the proposed senior team members, Steve Lewis and Carol Loughlin. Steve and Carol will be the Senior Consultants assigned to this project supported by Sapere's staff. Full resumes are also enclosed.

Name and Education	Selected Experience
Steve Lewis **Education** Gonzaga University, Spokane: Bachelor of Science, Physics & Mathematics Magna Cum Laude	Steve Lewis has expertise in all areas of power trading, power management and utility operations, including asset optimization, risk management, power resource planning and acquisition, power plant development and acquisition, transmission contracting and issues, hydro operations, and balancing authority area operations. Steve has supported numerous northwest electricity transactions, including structured solicitations for resources or specified energy products. Projects led by Steve include: • Deployment of multi-project optimization systems for Chelan PUD. Chelan owns and operates two large run-of-river dams on the Columbia River and embarked on a process to procure and implement a complex system of optimization tools to dispatch the projects on a day-ahead and real-time basis. Sapere is managing the project for Chelan with an expected go-live date in late 2019. Steve has led this project and acted as a subject matter expert in the areas of regulatory compliance, grid reliability obligations, plant optimization, grid management and other areas. • Worked with The Energy Authority (TEA) to improve their optimization of client generating assets in Northwest US markets. The improvement effort included working with TEA's technology staff to improve the optimization software to ensure solutions recognize BPA Slice operating limits and produce actionable results. It also required working directly with real-time trading staff on proper deployment and use of the TEA Optimizer and the creation of performance metrics that quantified the value added from successful optimization and related market trading activities. The combination of tool improvement melded with business process improvements resulted in a demonstrable benefit to TEA's clients. • Facilitate solicitations for Montana Community Renewable Energy Projects (CREP) on behalf of NorthWestern Energy. Most recently, Sapere was responsible for drafting, issuing and managing all aspects of the 2018 CREP RFP, from initial planning through the selection of finalists and the negotiation of definitive agreements. NorthWestern Energy is an investor-owned electricity and natural gas utility serving Montana and South Dakota. Managing the CREP RFP on behalf of NorthWestern Energy requires expert knowledge of Montana statutes and regulations, an understanding of NorthWestern's power and energy needs, as well as their portfolio modeling and valuation processes and their risk policies and tolerances. Sapere will also support NorthWestern in any filings with the Montana Public Utility Commission resulting from the CREP RFP process. • Supporting the development of EDF Renewables' projects by facilitating the interconnection processes with local utilities and marketing efforts targeting long-term purchasers of the facilities' power output and environmental attributes. Services provided require detailed working knowledge of the northwest grid, including the potential for changes brought about by market transformation. Support has included a

Name and Education	Selected Experience
	wind project seeking to connect to a utility currently joining the northwest Energy Imbalance Market (Puget Sound Energy). Steve was a Power Marketer with Seattle City Light from 1999 to 2001, where he led within-month generation asset optimization and related power marketing in conformance with the overall utility resource hedging strategy. Seattle's approach sought to balance value with revenue certainty by combining forward hedging with aggressive short-term optimization strategies that conformed to operating, regulatory, and reliability constraints. Seattle's generating portfolio is predominantly hydro but included a share of the Centralia coal plant that is now owned and operated by TransAlta. He led the negotiation for the purchase of a 10-year power purchase contract for output from the Klamath Falls cogeneration project, including the execution of the first gas derivative hedge by Seattle City Light to mitigate the gas price exposure contained in the electricity purchase contract. Steve was the lead electricity trader at Puget Sound Energy. As part of this role, he developed and maintained models for the optimization of Puget's hydroelectric generating projects. This included both spreadsheet tools and coding of computer programs to meet refill, flood control, and reliability uses of the projects while maximizing the financial value by optimizing generation against forecast market prices. Steve also led the development of forward hedging models to appropriately hedge the value of the generating assets, including the development of dual-fuel options analysis related to Puget's natural-gas fired peaking and co-generation projects. Projects included multiple hydro projects, approximately 700 MW of peaking gas-fired units, 650 MW of combined cycle co-generation facilities and about 840 MW of coal-fired generation at both the Centralia and Colstrip projects.

Name and Education	Selected Experience
Carol Loughlin **Education** University of Washington, Seattle: MBA University of Virginia Charlottesville: B.A., International Studies and Japanese Language New York Institute of Finance, New York: Post-graduate studies in financial analysis and securities regulations	Carol has over two decades of finance and energy industry transaction experience. Her roles have included power marketing, financial modeling, and negotiation of equity and debt financing terms and asset purchase and sale agreements for utility-scale power generation projects. She has also prepared, presented and maintained project and department budgets, and served as project manager for development-stage energy projects. • Market hydropower generation from multiple facilities located in the WECC. • Performed due diligence and negotiated acquisitions of hydropower, wind, solar and geothermal generation facilities. • Supported PacifiCorp's Renewable Resource RFP process; evaluated submitted wind projects' viability and energy projections. • Supported NorthWestern Energy's CREP RFP process. • Worked with Barrick Gold Corporation to investigate opportunities for development of distributed generation at mining sites. • Oversaw development teams for projects including Granger Solar, Valley Center Solar, Cedar Creek Wind, and Palmdale Energy Center (670 MW combined cycle facility). • Collaborated with project development teams to create and maintain financial models for solar, wind, hydropower and natural gas projects. • Prepared and presented project and department budgets, status reports, and feasibility assessments for management review; responded to questions; secured board and management approvals. • Marketed electric generation assets to potential equity investors and lenders, evaluated competing offers and selected partners. • Tracked project development schedule and budget; ensured compliance with terms of site control, equity investment, JV and loan agreements. • Performed due diligence and financial modeling for corporate and project acquisition targets, including creation of a financial model to support a client's offer to purchase an electric utility. Transactions include: • Advised Cook Inlet Region Inc. (CIRI) on initial financing and subsequent refinancing of Fire Island Wind. • Secured $242 million syndicated loan facility for 132 MW Cedar Creek Wind, LLC with an investment-grade rating from Fitch Ratings. • Closed a $30 million construction and long-term debt facility for 18 MW Fire Island Wind and a $6.4 million development loan for North Star Solar, LLC. • Negotiated and closed a milestone-based sale of 60 MW North Star Solar, LLC to First Solar Inc. Negotiated the sale of 3 MW Granger Solar, LLC and 7 MW NLP Valley Center Solar, LLC to BayWa RE. • Closed a Purchase and Sale Agreement for acquisition of early-stage development asset, Palmdale Energy Project, from the City of Palmdale . • Secured an Equity Purchase Option Agreement and Development Funding Agreement with an investment fund for 670 MW Palmdale Energy Project, a combined cycle natural gas power generation facility.

III. Related Experience

Sapere has supported many clients in resource procurement and management activities. Listed below are two examples of support provided to northwest utilities in their structured resource procurements. Additional example projects can be provided If desired.

NorthWestern Energy – Community Renewable RFPs

Since 2013, members of Sapere Consulting's Energy Solutions team (Steve Lewis, Carol Loughlin, Andrew Bulmer and Chris Parsons) have administered NorthWestern Energy's ("NWE") annual Community Renewable Energy Project Request For Proposals ("CREP RFP"). The NWE CREP RFP seeks to acquire renewable resources located in Montana to meet NWE's electricity supply needs consistent with the need to acquire cost-effective CREPs. Sapere has provided the following services:

1. **CREP RFP Development –** Collaborate with NWE to draft the RFP and its attachments, including power purchase agreement and build-transfer templates, and forms for project description, generation estimates, equipment and cost details, and project schedules. Update the RFP documents as necessary to reflect new renewable technologies or other changes.

2. **Document Control –** Create a dedicated RFP email address and website each year to communicate with bidders and provide application materials, instructions, RFP schedule and contact details.

3. **Administration –** Manage the distribution and receipt of all RFP documents: maintain a targeted distribution list; distribute RFP announcements; receive, log, and retain all documents submitted in the RFP; serve as sole bidder contact through finalist selection.

4. **Communications –** Administer bidder conference calls; respond to inquiries; provide written summaries of conference calls to NWE and bidders; request proposal clarifications.

5. **Proposal Screening –** Conduct an initial analysis of RFP submissions and screen the proposals. Recommend the shortlist to NorthWestern based on analysis and screening. Prepare written reports and presentations for NWE leading to the approval of a project shortlist for further evaluation.

6. **Shortlist Analysis –** Conduct in-depth analysis of shortlisted projects' viability, total cost, and generation estimates based on reviews of:
    a. Sponsor and contractor experience and financial plan
    b. Proposed equipment and warranties
    c. Generation studies and assumptions
    d. Evidence of procurement and EPC commitments
    e. Construction expense and operating budgets
    f. Status of permitting, interconnection and transmission agreements
    g. Proposed project schedule relative to RFP requirements
    h. Safety questionnaire responses

7. **Project Matrix –** Create a matrix and score projects based on evaluation criteria.

8. **Finalists –** Prepare written reports and presentations for NWE that document the evaluation and scoring process. Coordinate reviews of recommended finalists leading to the selection of a project or projects for contract negotiation.

9. **Close-out Activities –** Prepare a final memorandum; communicate with CREP respondents and delivere RFP materials and information to NorthWestern staff.

10. **Regulatory Support –** Assist in preparation of materials and information for state regulatory filings related to the CREP RFP process as needed.

PacifiCorp – 2017 Wind Resource RFP

PacifiCorp sought to acquire new or repowered Northwest wind resources in its 2017R Request for Proposals ("RFP"). The RFP process was time-sensitive due to PacifiCorp's interest in leveraging expiring PTCs, consequently, the work were condensed to a rigorous schedule. Sapere's Energy Solutions team (Steve Lewis, Carol Loughlin and Erich Wolf) evaluated and validated the capacity factor, energy profile, and generation performance provided in each shortlisted wind project's proposal acting on behalf of PacifiCorp as a part of their evaluation team. Sapere analyzed the uncertainty associated with the predictions provided in the proposals, participated in discussions with PacifiCorp and Oregon's and Utah's Independent Engineers, prepared a summary report, and presented the results to PacifiCorp's Resource and Commercial Strategy team. Specific tasks and deliverables included:

1. **Technology and configuration** – Evaluated proposed project specifications, such as whether the proposal included new or repowered wind resource, the type of generation equipment and site layout, manufacturers of major equipment, warranties, and power curves.

2. **Wind Reports** – Reviewed wind studies to determine the accuracy of the wind and energy forecast
   a. How was the wind data collected, certified and correlated to reference points
   b. Who provided the wind data analysis?
   c. Which long term metrological data set was used and how resulting generation was calculated
   d. Reference height of the meteorological data and how the wind data was adjusted for the turbine hub height
   e. Estimated wind shear
   f. What de-ratings were applied (array losses, line losses, blade degradation, site elevation, etc.)

3. **Reviewed Energy Projection Assumptions**
   a. Predicted hub height mean wind speed and gross and net energy production
   b. Turbine power curve employed and any adjustments made to the power curve
   c. Monthly and diurnal pattern of predicted energy production with an explanation of the variation
   d. Analysis of the uncertainty associated with the predictions provided in the assessments.

4. **Mapping** – Created a map of operating and proposed projects in the areas of each shortlisted project

a. Included County-mandated wind turbine setbacks to estimate any external wake losses
b. Requested energy generation data from PAC wind projects for comparison to shortlisted project estimates
c. Compared wind assessments to NREL wind resource data

5. **Loss Assumptions** – Assessed the accuracy each project's wind loss assumptions including:
   a. Wake effect and availability losses
   b. Turbine performance loss including power curve adjustment and wind shear
   c. Environmental impacts such as icing, high wind hysteresis, snow, low temperature cut-outs
6. **Applicant Follow-up –** requested that PacifiCorp obtain certain clarifications from RFP respondents
7. **Assessment** – Developed a 2-3 page detailed analysis of each project's wind assessment report and energy estimate.
8. **Presentation** – Presented the RFP2017R Wind Resource Analysis to the PacifiCorp Resource and Commercial Strategy team and responded to questions about the evaluations.

IV. Cost Estimate

Enclosed is a detailed cost estimate for Tasks 1 and 2 of the provided Scope of Services. As discussed, we have not prepared an estimate of the Task 3 items but would prepare an estimate of that work as we approach the conclusion of Task 2 and have a better idea of how much work might be entailed in that effort. Time for associate staff has been included as well as time for a technical resource supporting our review of the financial models.

Additionally, we have estimated the costs of certain Task 2 items based on the time required per proposal received. This allows us to scale the estimate up based on the number of proposals. The top-level cost estimate is provided in the table below:

Number of Proposals	Estimate	w/ 15% Contingency
20	$	$
30	$	$
40	$	$
50	$	$

Please review the enclosed workbook for additional details on these totals.

STEVEN E. LEWIS

206-726-3695 (o) ♦ 206-290-6059 (m) ♦ slewis@sapereconsulting.com

SUMMARY OF QUALIFICATIONS

30 years of professional experience in the energy industry. Expertise in all areas of power management and utility operations, including energy trading, risk management, power resource planning and acquisition, power plant development and acquisition, transmission contracting and issues, hydro operations, control area operations, and state and federal electricity rates and regulation.

PROFESSIONAL EXPERIENCE

SAPERE CONSULTING
Seattle, Washington March 2016-Present
Senior Consultant & Owner
Mr. Lewis' clients include Pacific Power, EDF Renewable Energy, NorthWestern Energy, the Warm Springs Tribes, Tollhouse Energy, Chelan Public Utility District and others. Mr. Lewis has led and actively worked on the following projects:

- Led the review, analysis and preparation of a proposal by Seattle City Light to provide another northwest public utility with wholesale management of their generation portfolio and load service. The other utility's portfolio includes a run-of-river hydroelectric project, contractual rights in another hydroelectric project with limited shaping capability and a Bonneville Power Administration ("BPA") Shaped Block power purchase agreement. The analysis established the potential value to Seattle of the management services and identified wholesale market risk factors, including transmission and market price exposure.
- Provide expert peer review service to the U.S. Department of Energy Water Power Technologies Office ("WPTO") for their Fall 2019 Peer Review process. The 2019 Peer Review included numerous projects in the WPTO Hydropower and Marine/Hydrokinetics Programs. Mr. Lewis evaluated projects in the Hydropower Program as a member of the New Technology and Modernization review panel. Areas of interest for these projects included use of composite materials in hydro turbine runners and creative approaches to reduce long-term costs for low-head and low-flow hydropower development opportunities.
- Provide owner and purchaser representation to a group of public utilities taking the output from the White Creek and Harvest Wind projects. White Creek is a 204 MW wind project owned by tax-equity partners. Mr. Lewis represents 6 utility off-takers who purchase the output of White Creek under long-term power purchase agreements. Mr. Lewis actively ensures these purchasers are properly represented in operational and planning decision processes and works with the owners as well as the third-party project

operator to provide fair representation. Harvest Wind is a 99 MW expansion of White Creek project and is jointly owned by four northwest public utilities. Mr. Lewis represents these four utilities (two are also White Creek purchasers) as the owner's representative working to ensure timely completion of budgets, as well as facilitating operating and planning decisions, some in coordination with White Creek decisions.

- Facilitate NorthWestern Energy's yearly Community Renewable RFPs from 2016-2020 seeking additional Montana in-state community-owned renewable resources. The 2020 RFP process is ongoing with active review of wind, solar and energy storage proposals in final review. The review included detailed financial modelling of the project proposals to determine the net financial costs/benefits to NorthWestern.
- Provide project leadership for Chelan PUD's implementation of new optimization systems to better dispatch the Rocky Reach and Rock Island hydro-electric projects on the Columbia River near Wenatchee, WA. This project requires careful planning and deployment of new sophisticated hydroelectric management and dispatching software in a high-reliability environment. Mr. Lewis investigated the cost and benefits of increased reservoir fluctuations, has developed water and energy accounting processes for the new systems and has analyzed the changing business process needs as a result of the new system and the potential impacts on staffing requirements.
- Evaluate the operation and determine the financial value of small hydro-electric generating projects for Tollhouse Energy Company. This has included evaluation and development of marketing and sales strategies for the Smith Creek hydro project in northern Idaho and two small hydro projects in northern California.
- Provide independent engineering services to the Warm Springs Tribes as part of the bond issuances that support their purchase and ownership of one-third of the Pelton-Round Butte hydro-electric projects in Central Oregon. The Warm Springs purchased their project ownership from Portland General Electric who continues to operate the projects. As independent engineer, financial projections, including revenue from electricity production, are made to ensure sufficient funds are available to meet bond payment schedules. Sapere's independent engineering reports were fundamental in the Tribe's successful refinancing of nearly $50M in outstanding bonds in 2019.
- Support developers of renewable energy projects by facilitating interconnection processes to local utilities and marketing efforts targeting long-term purchase agreements for both the power and environmental attributes of the projects. The services require detailed working knowledge of the northwest grid, including the potential for changes brought about by market transformation.
- Evaluate sites throughout the western US for their suitability for the development of renewable generation projects such as wind and solar for a large multi-national mining company. Evaluations have included reviews of all aspects of a site's suitability including determining the amount of energy that might be produced at a specific site, the cost of infrastructure required, grid interconnection and delivery costs, and land use regulations.
- Evaluate Wyoming-based wind project proposals for Pacific Power. The evaluation was specifically targeted to the forecasted energy production for 12 different project

proposals responding to Pacific Power's resource RFP. The review evaluated the raw wind data, the methodologies to convert wind data to energy data, a review of the losses computed in the energy production, validation that proper equipment performance data was used and that the energy estimates were properly tailored to the site's local topography.

LANDS ENERGY CONSULTING
Seattle, Washington 2001-March 2016
Principal Consultant
Owner and president of Lands Energy Consulting. A partial list of clients includes: NorthWestern Energy, The Energy Authority, the Confederated Tribes of the Colvilles, The BPA Slice Customers (18 northwest public utilities), Snohomish PUD, and Seattle City Light. Key projects Mr. Lewis has led include:

- Facilitate numerous structured resource solicitations including RFPs for NorthWestern Energy. These resulted in completed purchase contracts for the 40 MW Spion Kop Wind Project and the 135 MW Judith Gap Wind Project (both in Montana) and the 25 MW Titan I Wind Project (South Dakota).
- Support the use and development of detailed hydro-electric water routing and optimization software employed by The Energy Authority ("TEA"). TEA uses the software to schedule power from the BPA Slice contracts for 9 full service utility customers and allows 3 additional utility customers to directly access the software to schedule their Slice contracts. The software optimizes water flow and power production from 10 federal projects to which Slice customers have contractual rights, including Grand Coulee, Chief Joseph and eight federal hydroelectric projects on the Lower Snake and Lower Columbia Rivers. Support by Mr. Lewis included detailed troubleshooting of optimization routines and analysis and review of the proper functioning of the software. Mr. Lewis also supported the development of Slice operating strategies for both the long and short-term and developed improved business processes at TEA ensuring the proper deployment of the software optimization models.
- Guide the development of risk management strategies and trading/scheduling practices for northwest hydroelectric based utilities, including Snohomish PUD and Seattle City Light. Snohomish PUD owns and operates the Jackson project, which is primarily a water supply project with power generation as a secondary output. They also purchase the largest amount of Slice contract power from BPA, which provides Snohomish with the flexibility and decision-making responsibility associated with a 5% share of BPA's generating capability. Seattle City Light is 90% hydroelectric.
- Facilitate multi-million dollar one- and two-year sales of hydroelectric output of the Wells dam in central Washington for the Confederated Tribe of the Colvilles. The sales went to numerous purchasers and have included minute-to-minute dispatch flexibility as a value driver. Sales have been facilitated through competitive processes and have required close coordination with the project operator and the potential purchasers.

- Lands Energy has also supported clients in the development of operating, marketing and scheduling strategies for renewable energy, including non-dispatchable resources such as wind and solar project output.

SEATTLE CITY LIGHT 1999-2001
Seattle, Washington
Power Marketer

- Directed all within-month marketing in conformance with the overall utility resource hedging strategy. Ensured a short-term operation of Seattle's generating assets optimizing their economic value within operating, regulatory, and reliability constraints. Included in Seattle's portfolio was over 2,000 mw of hydro-electric generating assets, multiple long-term contracts for power purchases/sales, 1,312 mw of long-term firm transmission rights on the BPA main grid, and 160 mw of capacity ownership on the NW/SW AC Intertie. The hydroelectric assets include a number of large storage and run-of-river projects (Boundary, Ross, Diablo, and Gorge) as well as two smaller storage projects with first purpose water supply uses (Cedar River and Tolt River Projects). Built an operations model for the larger hydroelectric projects allowing Seattle's energy traders to accurately plan the operation of those projects and to buy or sell energy for future hours or days as needed to properly balance Seattle's system.
- Negotiated the operating provisions of the first BPA Slice Agreement. This included the determination of the modeling process that would be used to determine Seattle's rights to capacity and energy in near-term planning and operations down to real-time determination of schedules of power from BPA to Seattle. The modeling process represented the BPA Slice system flexibility which Seattle purchased under a 10-year contract.
- Led the negotiation for purchase of a 10-year power purchase contract from the Klamath Falls cogeneration project, including the execution of the first gas derivative hedge by Seattle City Light designed to mitigate the gas price exposure contained in the electricity purchase contract.

PUGET SOUND ENERGY 1990 - 1999
Seattle, Washington
Senior Electricity Trader (Title upon departure)

- Puget's designated operations liaison with Duke Energy during the Puget/Duke operating and trading alliance. Coordinated trading and marketing activity between Duke's trading floor in Salt Lake City and Puget's trading floor in Bellevue. Worked with Duke's origination staff in the marketing of non-standard product offerings within the Northwest. Reviewed the modeling of Puget's resource assets within trading books at Duke, and evaluated the performance of the hedging activities within those books.
- Developed Puget's forward electricity trading operation. Initiated Puget's trading through the brokered over-the-counter electricity markets for western points of receipt. Established fundamental analysis techniques to support trading efforts. Trading goals for Puget included both hedge trading around their existing asset base and speculative trading within a well-defined value-at-risk mechanism.

- Developed and maintained operational models for the optimization of Puget's hydroelectric generating projects. This included both spreadsheet tools and coding of computer programs to meet refill, flood control, and reliability uses of the projects while maximizing the financial value. Projects included the Upper and Lower Baker projects, the White River project, Snoqualmie Falls, as well as over 1,000 MW of participant rights in the five non-federal Mid-Columbia projects (Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids).
- Maintained and ran a stand-alone copy of the Northwest Power Pool's hydroelectric regulation model. The primary purpose of this model was to support coordination of the northwest hydroelectric system as called for under the Pacific Northwest Coordination Agreement. Puget's independent model runs were made to support short-term operational strategies as well as to provide input to the long-term production costing models uses for ratemaking purposes.
- Represented Puget in various regional forums and efforts, developing a strong understanding of the different issues and stakeholders. These regional forums and processes include:
    - Participation in regional planning called for under the US-Canadian Columbia River Treaty, including review and understanding of the Annual Operating Plan ("AOP"), the Detailed Operating Plan ("DOP") and the development of the determination of the downstream power benefits and the resulting Canadian Entitlement to one half of the energy and capacity determination.
    - Review of BPA's loads and resources planning process (the "White Book") and review of the related model results.
    - Negotiation of terms and conditions for a Puget-BPA Non-Treaty Storage Agreement which Puget ultimately declined to sign due to a negative outcome on a cost-benefit evaluation.
    - Participated on behalf of Puget in the BPA System Operations Review conducted in the late-1990s to evaluate the Pacific Northwest system operations and resulted in various records of decisions by the operating agencies in 1997.

BONNEVILLE POWER ADMINISTRATION SUMMER 1988
Portland, Oregon

Engineering Intern

Designed and programmed various aspects of the Accelerated California Market Estimator ("ACME") computer model, which simulated economic dispatch of the Southwest electric generating resources to forecast the Southwest electric market through identification of the highest-cost marginal resources. ACME was a subroutine of the SAM model, which was run for various purposes, including value justification of investment in and construction of various BPA transmission assets.

EDUCATION

GONZAGA UNIVERSITY, Spokane, Washington
Bachelor of Science, Physics with a Mathematics Minor
Magna Cum Laude

EXPERT TESTIMONY

STATE OF IDAHO DISTRICT COURT – SEVENTH DISTRICT 2018-19
FALL RIVER ELECTRIC COOPERATIVE AND FREMONT MADISON IRRIGATION DISTRICT VS. SUNRISE ENGINEERING, INC. ET. AL.
Provided expert analysis and written reports on behalf of defendant Sunrise Engineering regarding the power and financial impacts of alleged defects in the design and construction of the Chester hydro-electric project in Southern Idaho. Case was settled prior to offering testimony.

MONTANA PUBLIC SERVICE COMMISSION 2016-18
DOCKET NOS. D2016.4.33/D2017.8.65 – CREP WAIVER
Testified on behalf of NorthWestern Energy regarding their renewable procurement efforts. In-person testimony offered to the Commission.

MONTANA PUBLIC SERVICE COMMISSION 2015
DOCKET NO. D2015.3.27 – CREP WAIVER PETITION
Testified on behalf of NorthWestern Energy regarding their renewable procurement efforts. In-person testimony offered to the Commission.

MONTANA PUBLIC SERVICE COMMISSION 2014
DOCKET NO. D2013.10.77 – CREP WAIVER
Testified on behalf of NorthWestern Energy regarding their renewable procurement efforts. In-person testimony offered to the Commission.

PUBLIC UTILITIES COMMISSION OF SOUTH DAKOTA 2012
DOCKET NO. EL11-006 – COMPLAINT BY OAK TREE ENERGY LLC
Testified on behalf of NorthWestern Energy regarding the wholesale electricity price used as part of their determination of avoided cost rates for PURPA project agreements. In-person testimony offered to the Commission.

LEWIS COUNTY SUPERIOR COURT OF WASHINGTON STATE 2008
TRANSALTA CENTRALIA GENERATION LLC VS. SICKLESTEEL CRANES INC. ET. AL.
Testified on behalf of defendant Sicklesteel Cranes regarding the financial impact of an outage at the Centralia coal plant on Plaintiff Transalta Centralia Generation. Testimony was provided as both taped deposition and in-person during the proceedings of the jury trial.

Carol Loughlin

206-732-6533 (o) | 206-375-6754 (m) | cloughlin@sapereconsulting.com

EDUCATION

MBA, Finance, Environmental Management Concentration, University of Washington, 1995
BA, International Studies and Japanese language, University of Virginia, 1986

SUMMARY OF QUALIFICATIONS

Ms. Loughlin has an extensive background in renewable power marketing and resource development. With over two decades of finance and energy industry experience, her roles have included negotiation of equity and debt financing terms and asset purchase and sale agreements for utility-scale power generation projects and serving as project manager for development-stage energy projects. Ms. Loughlin has performed financial modeling, company valuation, due diligence, project budget development and tracking, and has been responsible for compliance with terms of financing and real property agreements, federal agency contracts, and power purchase and interconnection agreements.

PROFESSIONAL EXPERIENCE

Sapere Consulting, Senior Consultant

- Support development, acquisition and financing of renewable energy projects by developing and maintaining financial models, budgets and schedules.
- Support interconnection and permitting processes for renewable energy developers.
- Market renewable generation and environmental attributes for multiple renewable facilities located in the WECC.
- Prepare RFP responses and negotiate power purchase agreements for renewable energy generators.
- Perform due diligence and negotiate acquisitions of hydropower, wind, solar and geothermal generation facilities.
- Support refinancing and equity sale processes for operating wind and hydropower projects.
- Site greenfield C&I solar net metering projects and manage project development through energization.

Summit Power Group, LLC., Vice President, Project Finance and Project Management

Led negotiation of debt and equity financing terms and asset purchase and sale agreements pertaining to large-scale energy generation assets. I also performed project management and provided project development support for Summit's energy projects. Led technical teams focused on completion of complex and strategic tasks. Responsibilities include:

- Collaborated with project development teams to create and maintain financial models, budgets and schedules for solar, wind and natural gas projects.
- Ran cost, power pricing and financing structure sensitivities; evaluated cash flow projections and financial returns.
- Prepared and presented project and department budgets, status reports, and feasibility assessments for management review; responded to questions; secured board and management approvals.
- Marketed assets to potential equity investors and lenders and evaluated competing offers.
- Worked closely with counsel, independent engineers, consultants, and internal team to structure financing packages.
- Tracked project development schedules and budgets; ensured compliance with terms of site control, interconnection and equity investment agreements.
- Issued financial and project status reports and payments as required under agreements.
- Negotiated real property agreements; obtained estoppels and subordination agreements; resolved title report issues; reviewed and approved project purchase orders and invoices.
- Coordinated use permit applications, environmental studies and reports, and offtake marketing.
- Performed due diligence for investment opportunities.
- Transactions included:

- Fully negotiated $242 million syndicated loan facility for 132 MW Cedar Creek Wind, LLC with an investment-grade rating from Fitch
- $30 million construction and long-term debt facility for 18 MW Fire Island Wind, LLC
- $6.4 million development loan for North Star Solar, LLC
- Milestone-based sale of 60 MW North Star Solar, LLC to First Solar Inc.
- Milestone-based sale of 3 MW Granger Solar, LLC to BayWa RE
- Milestone-based sale of 7 MW NLP Valley Center Solar, LLC to BayWa RE
- Purchase agreement for early-stage development asset, Palmdale Energy Project, from the City of Palmdale
- Equity purchase option agreement and development funding agreement with investment fund for 670 MW Palmdale Energy Project, a combined cycle natural gas power generation facility.

Independent Contractor, Grant Writing, Reporting and Project Management
Subject matter expert and consulted with various clients. I led efforts to determine client financial needs and prepared and submitted grant applications for funding to meet those needs. I also had material roles in grant financed project execution and reporting. Examples included:

- Conducted stakeholder meetings to identify and prioritize organizational needs.
- Compiled and maintained financial information and program details; obtained bids for capital improvements and construction.
- Identified applicable grant opportunities; developed and submitted applications for program, operations and capital project funding.
- Implemented projects, oversaw expenditures, and ensured compliance with grant contracts.
- Prepared and submitted monthly, quarterly and annual reports as required.
- Grant-funded projects included:
  - *Pilchuck Glass School* – general operations, capital projects, and diversity initiatives
  - *Northwest Student Loan Association* – College Access Center capital funding, and Mentor 2 College program funding
  - *Mount Rainier High School* – Track and Field construction
  - *Marvista Elementary School* – Multi-use playfield construction and funding for improved crosswalk signage and solar-powered lighting
  - *Recycling Northwest* – Braille and multilingual signage and program information
  - *University of Washington* – Guest lecturer on Grant Sourcing, Writing and Reporting

Recycling Northwest, Program Manager – Commercial Recycling
Designed, marketed and implemented cost-effective large-scale recycling and composting programs for cities and commercial and industrial customers in King County.

Battelle Pacific Northwest Laboratories, Graduate Fellowship

- Created models and conducted data analysis for the Manufactured Housing Conservation Acquisition Program – an agreement between Northwest housing manufacturers, Bonneville Power Administration and utilities that provided financing for energy efficient building specifications as a cost-effective alternative to increasing BPA's generating capacity.
- Co-authored an Issue Paper for the Department of Energy addressing the impact of energy efficiency on housing affordability.

R.D. Smith & Co./BDS Securities, Principal & Senior Bank Loan Trading Officer

- Managed bank loan transaction negotiations and contracting with face value of over $1 billion.
- Supervised three bank loan trading officers.

R.D. Smith & Co./BDS Securities, Bond Salesperson and Analyst

- Analyzed finances of distressed organizations, including valuations of debt instruments based on covenants, securitization, asset values and overall debt hierarchy, and provided investment, divestment or realignment recommendations.
- Established a joint venture with Yamaichi Securities to facilitate information flow to risk-averse Japanese investors regarding distressed US securities in their portfolios.

Dillon, Read & Co. Inc., Associate

- Prepared updates on energy company and industry research reports to incorporate news and trading information.
- Contacted fund managers with daily updates, completed trading orders, and promoted IPOs.

EMPLOYMENT HISTORY

Sapere Consulting, Inc.	Senior Consultant	2017 – Present
Summit Power Group, LLC	Vice President, Finance & PM	2010 – 2017
Independent Contractor	Grant Writer and PM	1997 – 2010
Recycling Northwest	Program Manager	1996 – 1997
Battelle Pacific Northwest Laboratories	Graduate Fellowship	1994 – 1994
R.D. Smith & Co./BDS Securities	Principal	1989 - 1993
Dillon, Read & Co. Inc.	Associate	1986 – 1989