

*Proposal to Provide*

**Consulting Services in Connection with the  
Proposed Merger of  
Appalachian Power Company and  
Wheeling Power Company**

**PSC Case No. 11-1775-E-P**

*Submitted to the*

**Consumer Advocate Division  
West Virginia Public Service Commission**

February 28, 2012

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## **1. INTRODUCTION**

Levitan & Associates, Inc (LAI) is an energy management consulting firm that is nationally recognized for developing cutting-edge quantitative solutions to complex problems related to integrated resource plans (IRP), wholesale market design, procurement, risk management, and valuation. LAI has advised state regulatory commissions and electric and gas utilities on resource planning matters and on the financial, operational, and socio-economic merits of mergers and acquisitions. LAI's engineers, economists, financial managers, and market specialists possess in-depth knowledge of wholesale energy markets, power purchase agreements (PPAs), financial hedge instruments, electricity and natural gas procurement, generation economics / valuation, retail rates, and environmental regulations. We understand the full range of conventional supply resources, renewables, energy efficiency (EE), and demand-response (DR). For over two decades, we have worked closely with electric utilities, investors, Independent Power Producers (IPPs), independent system operators (ISOs) / regional transmission organizations (RTOs), state commissions, and large industrial and institutional end users throughout the PJM market and other North America regions.

We have been following the planned merger of Appalachian Power Company (APCo) and Wheeling Power Company (WPCo) in the context of the structural changes that American Electric Power (AEP) is trying to implement. We understand the key issue of assuring adequate and cost-effective power supply sources for West Virginia ratepayers in light of primary uncertainty factors affecting electric supply over the planning horizon, including (i) fuel price uncertainty (particularly natural gas), (ii) stricter environmental regulations (especially for AEP's coal fleet) with consequential operational, capital expenditure, and O&M cost impacts, (iii) evolving Renewable Portfolio Standards (RPS), and (iv) the requested APCo / WPCo merger as part of AEP's likely restructuring and the replacement of the AEP Pool Agreement with a new cost-sharing agreement.<sup>1</sup> LAI will track Federal Energy Regulatory Commission (FERC) and state commission proceedings to keep informed of new developments that affecting both the resource mix and supply transactions that APCo and WPCo may pursue.

## **2. QUALIFICATIONS AND EXPERIENCE**

LAI has extensive experience in all aspects of load forecasting, resource planning, market dynamics, and planning models that are integral to the IRP process. Since our founding in 1989, LAI has provided a broad spectrum of power and market advisory services on diverse matters pertaining to IRPs as well as assisting state commissions and ratepayer advocates on mergers and acquisitions. In PJM, LAI has been involved in the full spectrum of power market activities, including resource planning, transmission, resource development, procurement, and regulatory matters.

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<sup>1</sup> FERC Docket EC12-71 and Ohio PUC Case Number 11-346-EL-SSO et al.

We are currently assisting the Connecticut Office of Consumer Counsel (OCC) evaluate the impacts to customers of the pending merger between Northeast Utilities and NSTAR. In a separate docket, we are also assisting the OCC review the Connecticut 2012 IRP, which is currently before the Department of Energy and Environmental Protection. We have also worked with Staff of the Connecticut Public Utilities Regulatory Authority (PURA, formerly the Department of Public Utility Control) on major issues of resource planning, power procurements, contract negotiations, and other matters. We propose that Dr. Ellen Cool, LAI Vice President and Principal, be the testifying expert for the Consumer Advocate Division (CAD) in this assignment. She has testified before PURA dozens of times on diverse matters, including the 2010 IRP submitted by Connecticut's electric distribution companies.<sup>2</sup> LAI conducted a comprehensive assessment of the companies' IRP modeling parameters, assumptions and approaches, and evaluated their conclusions and recommendations.

We have conducted IRP assignments for other state commissions as well. We provided the Maryland Public Service Commission (PSC) with a series of technical IRP studies pertaining to resource options and adequacy in SWMAAC and the merits of re-regulating generation assets in Maryland. This work included the impact of PJM-approved backbone transmission projects, and the economic and environmental benefits of conventional and renewable technologies, including wind, photovoltaics, and EE / DR.<sup>3</sup> Seth Parker, LAI Vice President and Principal who would manage the day-to-day work for CAD, testified before the Virginia State Corporation Commission (SCC) on Dominion Virginia Power's 2009 IRP and other matters.<sup>4</sup> In addition, LAI experts have testified before state regulatory agencies in New York, Massachusetts, Vermont, New Jersey, New Hampshire, Rhode Island, Michigan, Wisconsin, Pennsylvania, California, Washington State, and Hawaii. LAI's experts have also testified many times before FERC on wholesale power, pipeline rate, and certificate matters.

LAI fosters informed decision-making on resource options with a comprehensive suite of resource planning, production simulation, transmission, economic, and mathematical models. We propose to utilize Strategist, an industry standard model for integrated resource planning that optimally selects and ranks alternative resource plans, for this assignment. Strategist can manage supply and demand balancing, production costing, environmental reporting, capital budgeting, and financial, tax, and revenue forecasts on a rate class basis. We forecast energy prices, facility dispatch, and cash operating margins for individual generators across the relevant market areas using our state-of-the-art chronological production simulation model, MarketSym, and use other financial, planning, and simulation models as well. We license MarketSym and Strategist from Ventyx for a wide variety of assignments to support multi-billion dollar investment, rate case, and procurement decisions.

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<sup>2</sup> Our testimony can be found in the Connecticut PURA Docket No. 10-02-07.

<sup>3</sup> Links to these IRP studies can be found at our website: <http://www.levitan.com>.

<sup>4</sup> SCC Case No. PUE-2009-00096.

We regularly update our database with the latest load forecasts, capital cost estimates for different plant technologies, PJM's Regional Transmission Expansion Plans, and other planning data to ensure accurate mapping of generation, transmission, and load information. We incorporate the latest developments in the capital markets, fuel prices, environmental compliance costs, renewable portfolio standards, and EE / DR initiatives into our models. Tradable emissions allowances such as SO<sub>x</sub>, NO<sub>x</sub>, and CO<sub>2</sub> factor into plants' variable operating costs and may drive plant attrition in the future. We derive and incorporate forward price curves for these allowances into our models. We also assess the capital investment, increased operating and maintenance costs, and deratings associated with requisite upgrades to emission controls and cooling water infrastructure. If required, our volatility model allows us to develop resource plans and forecast energy prices during periods of low reserve margins and price instability.

### **Wholesale Electric Power Markets**

LAI has represented stakeholder groups on diverse matters pertaining to wholesale market design, PJM's Reliability Pricing Model (RPM), transmission withdrawal and interconnection rights, pricing, cost of service, and wholesale procurement. We have worked on many PJM matters pertaining to wholesale market design, resource adequacy, fuel supply, and gas network infrastructure reliability. We represented the New York Independent System Operator (NYISO) on the New York spot capacity market, establishing technical and commercial benchmarks pertaining to the demand curve framework and testing the mechanism for price volatility and gaming opportunities. We collaborated with representatives from generation and transmission companies, utilities, public advocacy groups, and the New York PSC, and prepared independent estimates of the Spot Capacity Market demand curve parameters, including cost of new entry, that we presented to, and were ultimately approved by, FERC.

LAI has worked on behalf of the Maryland PSC since 2007 on many matters, including an IRP-type evaluation of alternative transmission, generation, and demand-side energy options in light of a potential capacity deficit in SWMAAC, the principal Maryland RPM zone. In support of Chairman Nazarian, LAI offered frequent testimony before the Senate Finance Committee and House delegates on matters pertaining to the capacity needs of Maryland, the economics of EE / DR, and the risk and reward associated with a potential return to rate base regulation under either utility ownership or a postulated Power Authority.

### **Power Supplies and Purchase Agreements**

In light of AEP's merger request and the consequential termination of WPCo's supply contract with Ohio Power Company (OPCo), LAI's successful track record assisting clients with the development, negotiation, interpretation, and administration of physical and financial power purchase agreements (PPAs) will strengthen the CAD's ability to assure adequate and cost-effective power supplies for WPCo's customers.<sup>5</sup> For over two

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<sup>5</sup> On page 13 of its application to FERC in Docket EC12-69-000, AEP states "Currently, Wheeling purchases capacity and energy under a cost-of-service wholesale power sales agreement with its affiliate

decades, LAI has provided wholesale power supply and contract advisory services for utilities and state commissions, going back to PURPA contract terminations and supporting Allegheny Power System and its subsidiaries regarding PPA buyouts and reformations. We have gone beyond mere deterministic analysis and been responsible for evaluating the risk profiles of substitute power supplies when contracts are modified or terminated. LAI financial analysts and engineers understand how to translate the complexities of a commercial transaction into enforceable language that reasonably apportions risks between buyer and seller, and protects ratepayers' interests in a revenue requirement environment.

We also recognize the potential advantages of short-term market procurements. During LAI's ongoing work for the Connecticut PURA, we have been responsible for overseeing the development of model contracts used to secure wholesale power supplies by the state's two investor owned utilities. LAI's recommendations regarding commercial risk mitigation mechanisms and the allocation of regulatory risk between buyer and seller were adopted. We monitor the procurements, develop the appropriate levels of credit support consistent with each utility's risk management policies, and calculate potential exposure. LAI is also responsible for monitoring all contract negotiations between each utility and its respective bidders.

In response to a legislative mandate, LAI assisted the PURA in procuring peaking generation resources to reduce the cost of ancillary services and other wholesale products allocable to the Connecticut load zone. LAI modeled ISO-New England's (ISO-NE's) auction process for procuring Ten Minute Spinning Reserves, Thirty Minute Non-Spinning Reserves, and capacity, and determined the appropriate level of new resources to minimize costs to ratepayers. LAI worked with PURA Staff to prepare an Order soliciting new peaking generation and a model financial PPA, developed the terms and conditions for the settlement mechanism, netted the market revenues for multiple ISO-NE products against each project's fixed and variable revenue requirements, evaluated the benefits to ratepayers, and testified before the PURA.<sup>6</sup>

LAI has provided long-term PPA administrative and management support for many utilities, including Con Edison, JCP&L, Orange & Rockland Utilities, First Energy, Public Service Electric & Gas, Commonwealth Electric, Pepco, Puget Sound Energy, Bonneville Power, Arizona Public Service, and Salt River Project. Last year we served as Agent and managed the Long Term Capacity Pilot Program procurement for the New Jersey Board of Public Utilities that culminated in innovative contracts to encourage 2,000 MW of new combined cycle plant development. On behalf of the Long Island Power Authority (LIPA), we provided technical assistance during the development and negotiation of a contract for energy and capacity from a new 308 MW on-Island combined cycle facility. LAI helped formulate key performance terms including target in-service date, guaranteed availability, withdrawal / delivery point(s), contract capacity and heat rate parameters, and responsibility for ISO charges, losses, congestion, and transmission costs, to ensure

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Ohio Power. Contemporaneously with the closing of this Transaction [the merger of APCo and WPCo], that agreement will terminate."

<sup>6</sup> Information regarding the PPA and this proceeding may be found in Docket Nos. 07-08-24 and 08-01-01.

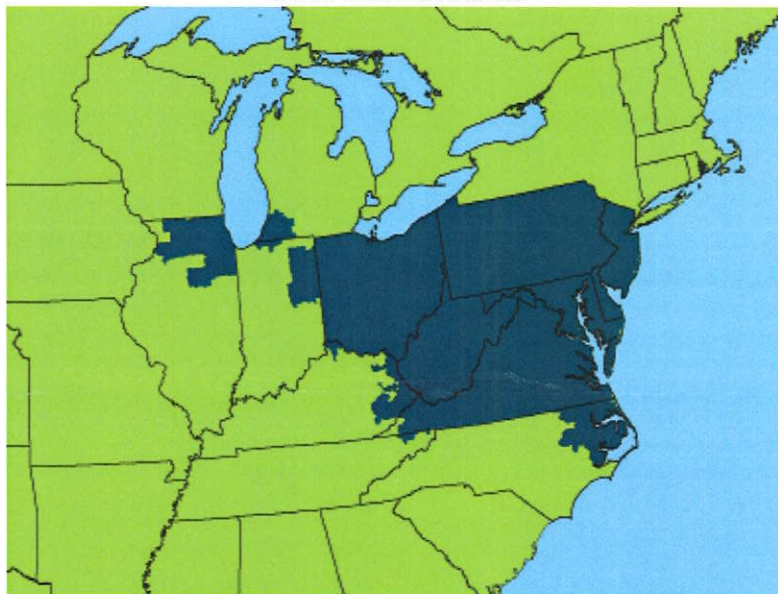


consistency of the PPA with evolving market rules. We analyzed the long-term financial consequences of operational and design changes proposed by the developer during contract negotiations. We have also provided technical assistance to LIPA regarding the 660 MW Neptune HVDC merchant transmission project from PJM to Long Island and long-term contracts for capacity and energy from PJM generators.

### **PJM Experience**

LAI has been active throughout PJM for over two decades in evaluating resource options, arranging bilateral capacity and energy transactions, and advising market participants on key engineering, economic, and regulatory matters. We have conducted studies of the bulk power system and gas transmission network in PJM and surrounding market areas. Our resource adequacy assessment for PJM was part of a first-of-a-kind, multi-region gas infrastructure study that culminated in an early-warning system for four northeast ISOs / RTOs to detect seasonal constraints on gas deliverability affecting bulk power security. LAI estimated the costs and benefits, including environmental benefits, of PJM resource options accessible via inter-market transmission lines, including the Hudson Transmission Project to Manhattan and the Neptune line to Long Island. LAI analyzed the PJM system impact study guidelines, market design, and emission allowance costs and forecasted power prices for our clients. Our comprehensive study for the New York Power Authority compared the economics of procuring PJM capacity and associated energy versus in-City options under a range of market scenarios, which included consideration of the cost of carbon reduction under various regulatory and legislative regimes.

**PJM Market Area**



LAI acted as the procurement monitor for Allegheny Power's December 2008 procurement of full requirements wholesale supply service for its Virginia service territory customers, and prepared a report on the bid process for the SCC. We had previously represented the Doswell IPP in a contract dispute with Virginia Power. LAI also worked with Allegheny

Power to facilitate an open, competitive solicitation for the sale of 180 MW of unit-contingent power from the Warrior Run plant. LAI prepared the RFQ and related documents, established a secure, web-based auction site, administered the solicitation process, managed bidder interactions, and evaluated the bidders' responses. We also testified for Shell Energy North America regarding Dominion Virginia Power's Solicitation for 2011 Unit Capacity and its 2009 IRP. We addressed issues of load forecasts, resource availability, comparative economics, and Virginia's status in the PJM market, and provided testimony before the SCC in both matters.<sup>7</sup>

### 3. IRP ANALYSIS AND APPROACH

For this IRP evaluation, we will develop and apply a customized analytic approach which recognizes the RFQ directive to compare APCo on a stand-alone basis to the merged APCo-WPCo entity over the next 10 years. We will use the Strategist model, an industry standard for integrated resource planning that optimally selects and ranks alternative resource plans. Strategist considers combinations of market purchases, new supply side and demand side resources, and upgrades of existing resources to meet the forecast load and reserve requirements. Strategist also reports and ranks the net present value of operating and future investment costs for each resource plan considered. We will supplement Strategist with in-house models to forecast external energy and capacity prices and to compare net costs on a revenue requirements basis.

We will evaluate the relative merits of the existing WPCo / OPCo supply contract against wholesale supplies available from the PJM market at large or from the new Power Cost-Sharing Agreement that will be replacing the existing AEP Pool Agreement.<sup>8</sup> APCo and WPCo's Joint Proposal asserts that revenue requirements will rise if WPCo is forced out or exits the OPCo agreement. As CAD has noted in their response to Staff in this proceeding, "how Companies will secure their power requirements will directly affect whether the merger is in the public interest."

There are a number of power resource and regulatory uncertainties facing the two companies that we will model as alternative scenarios. Our proposed scenarios will provide a comprehensive backdrop to compare the APCo Case and the APCo-WPCo Merger Case and allow CAD to determine whether the merger is consistently and robustly optimal. We would be pleased to review these proposed scenarios with CAD and revise them if necessary:

- A competing outlook for long-term fuel prices with emphasis on prolonged natural gas price suppression due to continued Marcellus Shale production.

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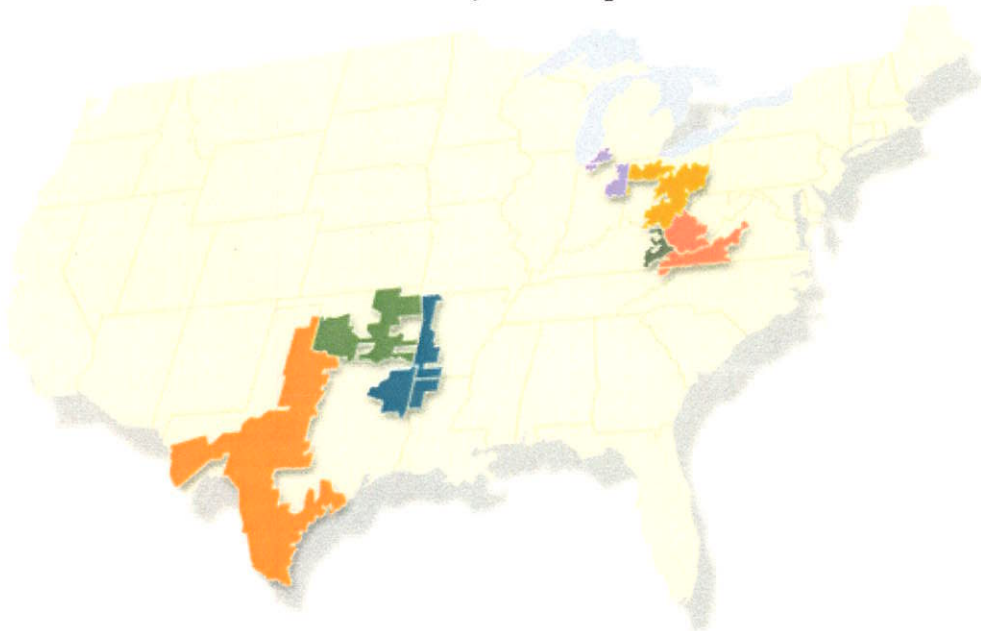
<sup>7</sup> Virginia SCC cases PUE-2008-00014 and PUE-2009-00096.

<sup>8</sup> The AEP-East Pool consists of APCo, Indiana Michigan Power Company, Kentucky Power Company, and OPCo. Neither Kingsport Power nor WPCo own generation, so are not part of the AEP-East Pool.



- Emerging environmental requirements for existing and future generation resources, particularly coal plants, to assess the potential for additional retirements or capital expenditures for compliance, as well as O&M and derating impacts.
- Alternative RPS requirements in West Virginia and neighboring states to assess the impact of renewable resource development and EE / DR programs on power supply alternatives for APCo and WPCo.
- AEP's corporate reorganization, beyond the separation of the OPCo generation assets, as envisioned in AEP's reorganization plan filed with FERC on February 10, 2012.<sup>9</sup>

### AEP System Map



At present, APCo's generation mix includes 5160 MW of coal-fired generation, 204 MW of hydroelectric plants, 548 MW of pumped storage plants, and 1100 MW of natural gas-fired plants.<sup>10</sup> There are no wind plants in APCo's portfolio but APCo purchases wind power under various contracts. Under AEP's reorganization plan filed with FERC on February 10, 2012 an additional 2,112 MW of coal-fired generation would be transferred from OPCo to enable APCo to satisfy its capacity requirements in PJM and provide baseload generation to meet its customers' energy requirements upon termination of the Pool Agreement. APCo's annual load factor in 2010 was 58% and is expected to be approximately 58% through 2021, based on normal weather.<sup>11</sup>

<sup>9</sup> The Ohio PUC approved Ohio Power's separation plan on January 23, 2012, but ordered a rehearing on February 23, 2012 in Case Number 11-346-EL-SSO et al.

<sup>10</sup> The 580 MW Dresden CC plant began commercial operation early in February 2012.

<sup>11</sup> WVPSC "Supply-Demand Forecast for Electric Utilities: 2012-2021", January 2012.

Our analysis will use the Strategist model to optimize the supply and demand resources for each case and quantitatively compare the difference in cost of those two resource plans discussed above. Since long-term resource adequacy and cost-effectiveness can be affected by a number of critical input factors, our IRP will specifically address them:

- **External Market Prices** – Although Strategist will evaluate the potential for external / off-system purchases and sales when simulating the operation of resources in a specific resource plan, LAI will use our MarketSym model, also licensed from Ventyx, to generate the external energy prices required by Strategist. Our MarketSym simulations will use the Strategist inputs, such as fuel and emissions prices, to ensure model consistency. This will also allow us to forecast WPCo’s costs under its existing agreement with OPCo.
- **Load Forecast** – LAI will review the load forecasts produced by AEP for its annual IRP through discovery requests. LAI will also review the Reliability First Corporation (RFC) load growth and customer demand used in the PSC “Supply-Demand Forecast for Electric Utilities: 2012-2021” report and adjust it if needed for the basis of our IRP development. We will confirm the reasonableness of the RFC forecasted average ten-year load growth rates of 0.8% per year for winter peaks and 0.9% per year for summer peaks. We will ensure that EE and DR impacts are consistent with PSC orders and policy, and are correctly incorporated in the load forecast.
- **Conventional Power Supplies** – Since the majority of APCo’s conventional power is coal-fired generation, a critical part of the IRP will be to determine which plants might be forced to retire or be derated because of the associated capital and operational cost under AEP’s Consent Decree from the New Source Review litigation, updated with the latest environmental regulations, including the new mercury and air toxics standards, the Cross-State Air Pollution Rule (if reinstated), technology upgrades for cooling water intake structures, and potential revisions regarding the management of coal combustion residuals. We assume that we will have access to IRP assumptions and other filings by AEP that postulate those values through discovery. We will use our in-house updated capital and operating cost estimates for generic coal-fired, gas combined cycle, and gas peaker plants for potential future supplies. We may also include new plants that AEP is developing over the study horizon.
- **Alternative and Renewable Energy** – APCo/WPCo must acquire 1.73 million alternative and renewable energy credits (ARECs) by 2015, increasing to 4.66 million by 2025 to meet their portfolio requirements based on their estimated future annual retail sales.<sup>12</sup> APCo/WPCo have plans to acquire the required ARECs through a combination of eligible resources, many of which are uncertain or have not yet filed for certification as qualified energy resources. We will review the

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<sup>12</sup> WVPSC “Supply-Demand Forecast for Electric Utilities: 2012-2021,” January 2012.

estimated compliance costs to determine whether they are reasonable and appropriately considered in the IRP.

- **Transmission Topology and Market Power Supplies** – The transmission infrastructure within West Virginia, in PJM, and with neighboring markets will affect the optimal resource options that will be developed by Strategist. We will update the transmission topology to reflect the existing transmission infrastructure, PJM backbone projects, and major upgrades expected to be completed within our planning horizon. We will also consider bulk power flows across the major transmission interchanges with interconnected market regions and neighboring ISOs / RTOs, as well as major bulk supply additions and retirements, which can significantly impact the energy balance in western PJM. These bulk flows may improve APCo's and WPCo's prospects for opportunistic wholesale market purchases.
- **Fuel and Emission Allowance Forecasts** – LAI will prepare a forecast of delivered fuel costs and review APCo's current fuel supply strategies including coal supply, transportation, storage, and ash disposal arrangements. Our analysis will take into consideration pending environmental regulations and the potential upgrades to each plant's emissions control systems that may be required. With new sources of shale gas nearby, APCo's natural gas plants may have lower fuel costs than previously assumed and more gas-fired plants may be developed by nearby utilities and IPPs. Our forecast of emissions allowance prices will be based on our current outlook on pending environmental regulations, historical and futures prices for SO<sub>x</sub> and NO<sub>x</sub> allowances, and technology advances involving flue gas desulfurization and NO<sub>x</sub> control retrofitting technologies.

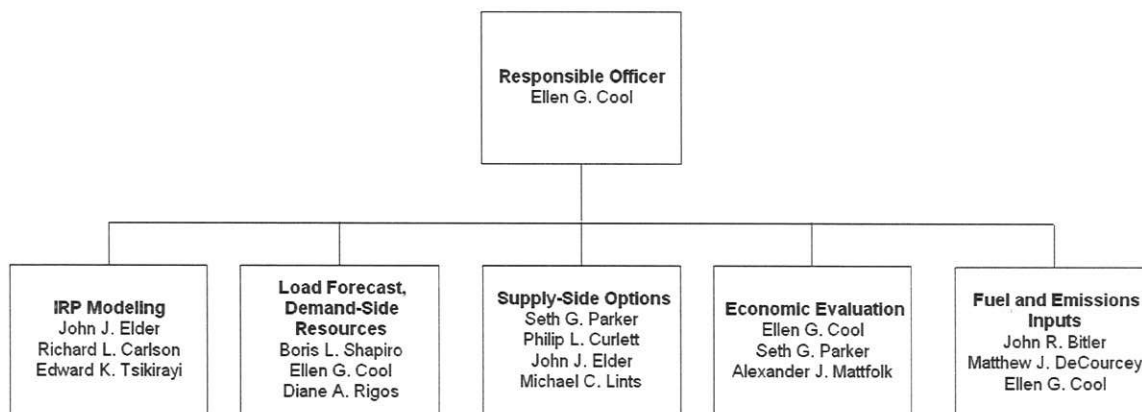
LAI will review APCo's IRP filed in Virginia last September and develop data requests to review AEP's model inputs for other recent IRP filings. We may modify those inputs as we see fit in order to provide an objective and independent IRP. LAI will provide a summary-level report and expert testimony supporting our IRP analysis, documenting our assumptions and providing recommendations for future resource planning efforts. We will prepare drafts of each document for CAD to review, and will incorporate any suggestions or recommendations in the final filed versions.

During the hearing stage of this assignment, LAI will review IRP-related analyses and testimonies submitted by APCo, WPCo, and other parties in the merger proceedings. We will critically evaluate all key IRP input assumptions, including a review of policy-driven programs, *e.g.* EE, DR, and renewables and an assessment of assumed retirements of existing coal resources and development of new conventional and renewable resources in West Virginia. We may rely on financial and engineering analysis and market forecasts in the public domain from other dockets at the PSC for our review. We will prepare a report in bullet form to guide CAD and PSC staff with IRP interrogatories and cross-examinations of other parties. We have assumed that Dr. Cool, our Responsible Officer for this project, will be in Charleston for up to three days to testify and to provide real-time assistance to CAD and PSC staff during the IRP cross-examinations.

#### 4. PROPOSED PROJECT TEAM AND BUDGET

LAI's proposed project team consists of consultants with resource planning and testimony who possess in-depth knowledge of the PJM wholesale power market and understand utility merger issues. An organizational chart and experience summaries are presented below for each of the proposed project team members. Dr. Ellen Cool will be the Responsible Officer and serve as the testifying witness on LAI's overall conclusions. Other consultants will be available to testify on IRP modeling and other technical issues if required.

**LAI Organizational Chart**



**Ellen G. Cool, Ph.D.**, Vice President and Principal, will serve as the Responsible Officer for this project and be the primary testifying witness. She has 25 years of consulting experience, including IRP studies, and led LAI's IRP and merger review efforts for the Connecticut OCC. Dr. Cool has evaluated competitive procurement options for wholesale power supply (including transmission and conventional and renewable generation projects). Dr. Cool has extensive expertise in environmental compliance strategies, siting and permitting of generation and transmission projects, and the net environmental impact of new and repowered generation projects. She has advised clients on cogeneration development, contract restructuring efforts, pipeline route options, and the acquisition of deregulated energy service companies. Dr. Cool participated in LIPA's Selection Committees which resulted in the commercialization of the Caithness Energy Center and the Neptune Cable projects. Since 2006, she has managed LAI's engagement on behalf of the PURA, providing oversight of utility competitive auctions for wholesale power, and also led LAI's efforts as the PURA's Prosecutorial arm for the competitive procurement of new in-state peaking generation. She testifies regularly before the PURA on the wholesale power market and the conduct of these procurements, and has also testified before the New Jersey Board of Public Utilities and the Massachusetts Energy Facilities Siting Board.



Prior to joining LAI in 1999, Dr. Cool was a Principal with Harding Lawson Associates, Inc. (formerly ABB Environmental Services, Inc.), where she managed the New England Area for the engineering and environmental consulting firm. She has worked at TRC Corporation and Woodward Clyde Consultants. Dr. Cool has also worked for mining and minerals companies in exploration and mine development. Dr. Cool received an A.B. in Geological Sciences from Harvard University, and an M.S. and Ph.D. in Geological Sciences from the University of Washington.

**Seth G. Parker**, Vice President and Principal, will manage the day-to-day activities and develop supply-side options, provide financial assumptions, and finalize the economic IRP results. Mr. Parker is an economics and financial manager with 33 years of experience in market design, price forecasting, credit and collateral issues, and the development, analysis, valuation, and financing of power and infrastructure projects. He recently testified on IRP and power procurement issues before the Virginia SCC. Mr. Parker assisted the NYISO with the Spot Capacity Market (demand curve) mechanism and advised PJM generation owners on the Reliability Pricing Model; he participated in FERC technical conferences for both matters. Mr. Parker testified before the RI PUC regarding the Block Island offshore wind project and the VT Department of Public Service regarding the VT Yankee nuclear power station. He is a frequent speaker on project financing and market design, and has provided expert witness testimony before FERC, in state and federal courts, and before state regulatory agencies on power market matters, renewable energy, wholesale procurement practices, resource planning, and generation issues.

Prior to joining LAI, Mr. Parker was a Vice President at Stone & Webster Management Consultants where he conducted due diligence in support of over \$6 billion of domestic and overseas project debt. He has also worked at two project development firms, J. Makowski Associates and ThermoElectron Energy Systems, and in the Treasurer's Office at Pacific Gas & Electric. Mr. Parker received a Sc.B. from Brown University in Applied Mathematics / Economics and an M.B.A. from the Wharton School in Operations Research / Finance.

**John R. Bitler**, Vice President and Principal, will be developing fuel and emissions inputs for the IRP model. Mr. Bitler has over 35 years of experience in the energy industry encompassing a wide range of fuel, power, and emissions control issues. He advises utilities, power generators, state regulatory agencies, and end-users regarding fuel market trends, procurement administration, gas supply and infrastructure developments, and emission control costs. Mr. Bitler is responsible for LAI's fuel market analysis and forecasting activities. He has directed wholesale power solicitations and auctions on behalf of utilities and state agencies with responsibilities for procuring energy, capacity, and renewable energy credits. Mr. Bitler has also submitted expert testimony before the FERC, the ICC, and state regulatory commissions throughout the U.S. on behalf of utilities and industrial end-users regarding power and fuel contract restructuring, fuel conversion issues, emissions control costs, and generation asset values.

Prior to joining LAI in 1992, Mr. Bitler was President of Environmental Catalyst Consultants, Inc., where he was responsible for consulting engagements concerning

catalytic emissions control applications to power generation and petroleum refining. He was an Executive Consultant at Stone & Webster Management Consultants and held commercial development, market planning and engineering positions with Northern Natural Gas, Inc. and research engineering positions with U.S. Steel Corporation. Mr. Bitler holds a B.S. degree in Mineral Economics from The Pennsylvania State University and an M.S. degree from The University of Pittsburgh in Mining Engineering.

**Michael C. Lints**, Ph.D., P.E., Manager - Power Technology, has over 25 years of experience in energy technology assessment, operational analysis, and applying advanced modeling techniques. Dr. Lints' expertise includes a variety of fossil power generation technologies, in particular, advanced turbine designs, waste coal, conventional coal, and biomass, as well as heat transfer, plant O&M standards, and engineering economics. Dr. Lints has formulated mathematical models to account for the price effects attributable to merchant exit, volatility, and plant optionality; has applied decision risk analysis to LAI's litigation support services; and has applied linear programming techniques to optimize competitive power procurements. He has conducted pipeline network pressure / flow simulations and optimization analyses of regional gas pipeline delivery capability and bulk power security throughout the Northeast. Dr. Lints has submitted expert testimony before state regulatory commissions.

Prior to joining LAI in 1990, Dr. Lints was President of Rochester Engineering. He is a registered professional engineer in New York. Dr. Lints holds a B.S. and an M.S. in Mechanical Engineering from Rochester Institute of Technology, and a Ph.D. in Mechanical Engineering from the Massachusetts Institute of Technology.

**Richard L. Carlson**, Ph.D., Managing Consultant, will help direct the IRP modeling. Dr. Carlson has 30 years of experience as a consultant, software developer, and research economist on a wide range of energy and environmental economics topics, including market behavior, market volatility, portfolio risk measurement, integrated resource planning, emissions compliance, and rates setting. While employed at Ventyx, Dr. Carlson led development of IRP software used for resource planning with additional features encompassing emissions compliance and hydro storage scheduling. Previously, he was product manager of planning and risk software used for power plant valuation, fuels and emissions allowance budgeting, risk management, and other planning applications by electric utilities and generating companies. Dr. Carlson has performed independent market price analyses in support of power plant financings and the auction of purchased power agreements, and has testified in rates and integrated resource planning cases in Maine and Ontario, and on the long-term impacts of fuel ethanol production.

Dr. Carlson received a Ph.D. and M.A. in Resource Economics from the University of Wisconsin, and a B.S. (with distinction) from Washington State University. Prior to joining LAI, he worked at Ventyx (and its predecessor companies, Global Energy Decisions and Henwood Energy), most recently as Vice President. He has also worked at The Goodman Group, Ltd. and Economics Plus, Inc., and as an assistant professor at Queens College in New York, and a research associate at Washington University

**John J. Elder**, P.E., Manager - Power Systems & Market Design, will head the IRP modeling effort. Mr. Elder has over 30 years of experience in the power industry. Mr. Elder supervises LAI's production simulation and transmission load flow modeling efforts to derive forward locational energy prices and is an authority on technical operating and performance issues. He has performed analyses of transmission pricing and access reforms under FERC initiatives and has provided utility clients with engineering economic evaluations and performance assessments of power stations. Mr. Elder also has extensive technical and supervisory expertise in thermodynamic performance and heat balances for fossil fuel power plants, fluid systems design, technology assessment, and steam cycle optimization.

Before joining LAI, Mr. Elder worked for at Stone & Webster Engineering Corporation as Principal Mechanical Engineer. Mr. Elder received his B.S. and M.S. degrees in Mechanical Engineering from the Massachusetts Institute of Technology. He is a registered professional engineer in Massachusetts.

**Philip L. Curlett**, P.E., Manager - Energy Systems Analysis, will provide up-to-date supply-side options for the IRP. Mr. Curlett has 37 years of experience in the energy industry with a broad background in engineering, development, and financing of generation facilities and infrastructure projects. Mr. Curlett has developed RFPs and managed bid evaluations for purchased power and EPC solicitations, and has conducted technical performance and project financial analyses for developers, lenders, power purchasers, utilities, and government agencies, an. He has been active in many aspects of utility deregulation and privatization of infrastructure services in North America and several developing countries, and is a leading expert in energy systems modeling and assessment. He has operated fluid flow models of natural gas pipeline systems for regional deliverability assessments and chronological power production simulation models for energy price forecasting.

Prior to joining LAI, Mr. Curlett was a Project Development Manager at Stone & Webster where he also held positions in the Heat Balance, Technical Studies, and Advanced Technologies groups. Mr. Curlett received a combined B.A. and B.S. degree in Economics and Mechanical Engineering from Bucknell University. He holds an M.S. in Mechanical Engineering from Bucknell and an M.B.A. from Babson College, and is a registered professional engineer in Massachusetts.

**Boris L. Shapiro**, Ph.D. and Executive Consultant, will assist in the development of load forecasts and demand-side resource inputs to the IRP process. Dr. Shapiro has over 30 years of experience in the energy industry, including power plant design and performance, power system planning and operations, and market design. He has international consulting and domestic regulatory experience providing technical and commercial advice to state utility regulatory commissions, electric power utilities, and system operators in the restructuring of the electric power industry, and the design and implementation of energy markets. Dr. Shapiro has provided expert witness testimony before FERC, and before state commissions on various matters related to the technical, economic, and reliability aspects of transmission project proposals, generation procurement, demand response and energy

efficiency resources, as well as on the wholesale market related issues. Dr. Shapiro supervises LAI's forward capacity market modeling effort and analytical framework for non-transmission alternative resources' evaluation, including demand resources.

Prior to joining LAI, Dr. Shapiro worked for the Massachusetts Department of Public Utilities and for PA Consulting Group. He received his M.S. degree in Electrical and Mechanical Engineering from the Moscow Power Engineering Institute, and a Ph. D. in Electric Power from the Russian Electric Power Research Institute.

**Edward K. Tsikirayi**, Executive Consultant, will assist with IRP transmission and market topology issues. Mr. Tskirayi has 18 years of bulk power planning and operations experience, including transmission-constrained reliability assessments and competitive market production simulations. He utilizes LAI's suite of chronological simulation and transmission flow models to conduct resource adequacy assessments, project economic evaluations, energy and capacity price forecasts, and load / optimal power flow analysis. Mr. Tsikirayi has conducted numerous multi-regional and inter-market price forecasts regarding the economic and reliability effects of proposed transmission upgrades. Mr. Tsikirayi actively coordinates LAI's efforts with respect to each ISO's OATT, scheduling protocols within and between neighboring market areas, and the use of financial transmission rights to hedge against congestion.

Before joining LAI, Mr. Tsikirayi was Lead Engineer at ISO-NE for Power Supply and Reliability Planning and was responsible for transmission-constrained reliability assessments. Prior to that, he worked as Principal Engineer for Integrated Resource Planning at the Zimbabwe Electricity Supply Authority and was the representative on the Southern African Power Pool's Generation Planning Working Group. Mr. Tsikirayi received his B.S. and M.S. in Electrical Engineering from the Moscow Power Engineering Institute.

**Diane A. Rigos**, Ph.D., Senior Consultant, will assist in developing the load forecast and identifying demand-side resources. Dr. Rigos has 20 years of renewable power and physical chemistry experience focusing on LNG, fuel cells, and renewable technologies including onshore/offshore wind and solar photovoltaics. She has assisted clients with evaluations of power supply proposals, with technical and safety advice on proposed LNG projects, and with development and valuation of wind plants. Dr. Rigos has also evaluated electric interconnection and system upgrade costs for merchant generators and calculated various emission rates for alternative resource options. She uses LAI's electric market simulation model to calculate locational energy prices and compare alternative energy and fuel scenarios. Dr. Rigos headed up the ISO-NE Phase I and Phase II wind studies and was responsible for the treatment of solar, onshore, and offshore wind resources in our IRP study for the Maryland PSC.

Prior to joining LAI in 2005, Dr. Rigos was Chair and Associate Professor of Chemistry at Merrimack College. In addition to her academic work, Dr. Rigos was a Principal Scientist at Physical Sciences Inc. where she worked on defense and energy contracts. Dr. Rigos



received a B.A. in Chemistry from Cornell University, a Ph.D. in Physical Chemistry from the Massachusetts Institute of Technology, and an M.B.A. from Northeastern University.

**Matthew J. DeCoursey**, Consultant, will be providing fuel and emissions inputs for the IRP model. Mr. DeCoursey has expertise in economics and financial analysis, including capacity price forecasts. He has assisted utilities and regulators in power and gas procurement matters, analyzed risk management strategies, and conducted numerous financial analyses of trading strategies, asset optimization and regulatory initiatives. Mr. DeCoursey has developed numerous long- and short-term price forecasts for gas, electricity, oil and solid fuels and has worked extensively on the development and evaluation of capacity demand mechanisms

Prior to joining LAI, Mr. DeCoursey worked for SmartEnergy, Inc., an energy services company operating in the New York and PJM markets. He holds a B.A. in Political Science and Economics from the University of Massachusetts at Boston.

**Alexander J. Mattfolk**, an Assistant Consultant, will provide research and analytic support for the economic evaluation of the IRP. Mr. Mattfolk has prepared quantitative analyses and modeling support for FERC technical conferences and written detailed analysis of FERC proceedings. He has also reviewed applicant testimony, produced interrogatories, and assisted in drafting testimony for Maryland PSC hearings concerning a utility merger application and its effect on the utilities and ratepayers. Mr. Mattfolk has also performed RPS support by quantifying economic impacts of combined-cycle plant construction using input-output analysis modeling.

Mr. Mattfolk received his B.S. in Chemical Engineering from the Massachusetts Institute of Technology and completed a minor in economics. His coursework included Energy Decisions, Markets, and Policies and Sustainability.

### **Not-to-Exceed Budget**

We have attached the Consulting Bid Form as included in the RFQ with a breakdown of hours and the rate we will charge for this assignment. Since expenses cannot be charged, we have pro-rated our standard hourly rates to cover model license fees, anticipated travel costs, and other direct and unavoidable expenses.<sup>13</sup> Our not-to-exceed budget of \$249,400 reflects an anticipated start date of March 1, a final IRP report of August 1 (depending on the date APCo and WPCO file their revised Petition), and hearings to be concluded by March 1 of next year.<sup>14</sup> The staff we would assign to this IRP effort are as follows:

- Vice Presidents: Ellen Cool, Seth Parker, John Bitler
- Managing Consultants: Jack Elder, Richard Carlson, Phil Curlett, Mike Lints
- Executive Consultants: Boris Shapiro, Ed Tsikirayi
- Senior Consultants: Diane Rigos

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<sup>13</sup> LAI ordinarily charges expenses without markup directly to our clients.

<sup>14</sup> As the Commission has yet to set an official procedural schedule, this timeline is an estimate based on the Initial Joint Staff Memorandum of January 20, 2012.

- Consultants: Mathew DeCoursey
- Assistant Consultants: Alexander Mattfolk

We will submit invoices monthly with a description of daily work efforts by consultant. Unless otherwise agreed, payment is due 30 days after receipt. Our budget is predicated on the specific IRP and testimony work tasks described above with the following caveats:

- We will prepare a summary-level IRP report that will briefly describe our key inputs, scenario definitions, and results. We anticipate four scenarios addressing alternative fuel prices, environmental regulations, RPS standards, and AEP's corporate restructuring, and would be pleased to revise these scenarios with CAD's input. While we anticipate that a summary-level report will be sufficient for a comparative evaluation (as envisioned herein), we can prepare a fully detailed report, as well as additional scenarios, as an option if required.
- We assume that we will have access to AEP's IRP filings or equivalent data with detailed assumptions about the capital and operating costs for existing coal plants to comply with anticipated environmental regulations. If required, we would be pleased to execute a confidentiality agreement with AEP to access this data.
- We have budgeted two one-day face-to-face meetings with CAD and other PSC staff with our Responsible Officer, Dr. Ellen Cool, in Charlestown for project kick-off and reviewing our draft IRP results. Other LAI consultants will participate in scheduled conference calls. In addition, we have budgeted two-to-three days for Dr. Cool to testify and attend hearings in Charlestown. We have assumed that rebuttal testimony will be required but will be limited and brief. The total testimony budget is 300 hours; additional LAI staff time or testimony by other LAI staff would be at our hourly rates.
- Our testimony and review of other testimony will focus solely on IRP and related power supply issues. We would be pleased to assist the CAD with other important matters in this docket and in FERC's proceedings if requested. LAI has considerable utility merger experience and is well qualified to assist with employment, corporate efficiencies, and other impacts that can provide ratepayer benefits.
- We anticipate that this entire assignment will be completed within one year.

## **5. REGULATED UTILITY ASSIGNMENTS**

Our current consulting assignments do not present any conflicts of interest which would limit our ability to provide the requested advisory services in a neutral and impartial manner. LAI has worked for regulated utilities, state commissions, and other power authorities on a wide variety of assignments, including many that directly determine revenue requirements. In addition to the numerous assignments mentioned earlier in this proposal, other past assignments are listed below with docket numbers where available.

- Maryland Public Service Commission – LAI testified on behalf of PSC staff concerning the pending Exelon-Constellation merger. We quantified the economic impacts of several aspects of the merger, including socioeconomic impacts and synergy savings for BGE ratepayers once certain expenses were removed from revenue requirements. Our filed testimony is contained in Case No. 9271. We also developed IRP studies for the PSC pursuant to Senate Bill 400 (Chapter 549, Acts 2007) and presented our results in person to the PSC and to the Maryland General Assembly.
- Co-Steel – LAI provided expert testimony before the New Jersey Board of Public Utilities on behalf of Co-Steel, Inc., a large industrial customer of Jersey Central Power & Light, regarding the impacts due to the merger of its corporate parent, GPU, with First Energy, Inc. We recommended appropriate actions for mitigating these impacts associated with power market, corporate financial and environmental compliance conditions that would affect future revenue requirements of the merged entity. The testimony is contained in Docket No. EM00110870.
- Southwest Gas Corporation – LAI prepared testimony on behalf of Southwest Gas Corporation in multiple El Paso Natural Gas Pipeline Co. rate cases before FERC, including, most recently, Docket Nos. RP08-426 and RP05-422. LAI filed answering and cross-answering testimony as needed on a variety of issues including cost of service, cost allocation, transportation rate design, contract discounting, and revenue requirements.
- Consolidated Edison – LAI was instrumental in evaluating, formulating, and negotiating a dozen PURPA contract buyouts for Con Edison, Jersey Central Power & Light, and Orange & Rockland that resulted in ratepayer savings in excess of \$1 billion. As part of the project viability assessments supporting these buyouts, LAI conducted detailed project engineering and financial evaluations along with regional power market analyses and price forecasts. Based on LAI's testimony before the NYPSC, our clients were authorized to collect, through ratepayer revenues, all contract-related transaction costs associated with those buyouts and restructuring.

## 6. OTHER INFORMATION

LAI has submitted the application to register with the West Virginia Purchasing Department. LAI will perform the proposed engagement in compliance with all federal and West Virginia state laws. We are providing the following forms as required in the RFQ:

- PSC12530 – Consulting Bid Form
- Vendor Preference Certificate
- Purchasing Affidavit

# PSC12530 - CONSULTING BID FORM

Employee/Title	Not to Exceed Number of Hours*	Hourly Rate	Extended Price
Vice Presidents	340	\$ 310	\$ 105,400
Managing Consultants	280	\$ 300	\$ 84,000
Executive Consultants	60	\$ 240	\$ 14,400
Senior Consultants	80	\$ 220	\$ 17,600
Consultants	40	\$ 180	\$ 7,200
Assistant Consultants	160	\$ 130	\$ 20,800
		Total	\$ 249,400

## Bidder / Vendor Information:

Name: Levitan & Associates, Inc.

Address: 100 Summer Street, Suite 3200  
Boston, MA 02110

Phone #: (617) 531-2818

Email Address: sgp@levitan.com

## Contact Coordinator Information:

Name: Seth Parker

Address: 100 Summer Street, Suite 3200  
Boston, MA 02110

Phone #: (617) 531-2818 Ex. 26

Email Address: sgp@levitan.com

The Consultant will not be reimbursed for hours that exceed the total hours for each Employee/Title



## State of West Virginia

**VENDOR PREFERENCE CERTIFICATE**

Certification and application\* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

**1. Application is made for 2.5% resident vendor preference for the reason checked:**

- \_\_\_\_ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
- \_\_\_\_ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,
- \_\_\_\_ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,

**2. Application is made for 2.5% resident vendor preference for the reason checked:**

- \_\_\_\_ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

**3. Application is made for 2.5% resident vendor preference for the reason checked:**

- \_\_\_\_ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,

**4. Application is made for 5% resident vendor preference for the reason checked:**

- \_\_\_\_ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,

**5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

- \_\_\_\_ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,

**6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

- \_\_\_\_ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (**West Virginia Code**, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: Levitan & Associates, Inc. Signed: 

Date: 14 Feb. 2012 Title: VP & Principal

\*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

STATE OF WEST VIRGINIA  
Purchasing Division**PURCHASING AFFIDAVIT**

**West Virginia Code §5A-3-10a states:** No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

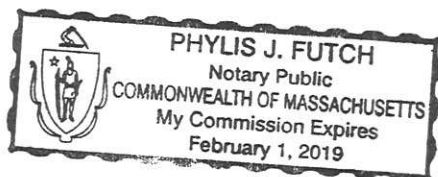
**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**Vendor's Name: Levitan and Associates, Inc.Authorized Signature: [Signature] Date: VP & PrincipalState of MassachusettsCounty of Suffolk, to-wit:Taken, subscribed, and sworn to before me this 14<sup>th</sup> day of February, 2012My Commission expires 2-1, 2019

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature]

# LEVITAN & ASSOCIATES, INC.

MARKET DESIGN, ECONOMICS AND POWER SYSTEMS

100 Summer Street  
Suite 3200  
Boston, MA 02110  
Tel: (617) 531-2818  
Fax: (617) 531-2826

February 28, 2012

Frank M. Whittaker  
Department of Administration  
Purchasing Division, Building 15  
2019 Washington Street, East  
Charleston, WV 25305-0130

Re: Consulting Services in Connection with the Proposed Merger of Appalachian Power Company and Wheeling Power Company, PSC Case No. 11-1775-E-P

Dear Mr. Whittaker,

Leviton & Associates, Inc. (LAI) is pleased to provide the Consumer Advocate Division (CAD) of the West Virginia Public Service Commission (PSC) with this proposal to provide Consulting Services in Connection with the Proposed Merger of Appalachian Power Company (APCo) and Wheeling Power Company (WPCo), PSC Case No. 11-1775-E-P. We are well-qualified in Integrated Resource Plan (IRP) matters and can provide informed resource planning advice to CAD for APCo on a stand-alone basis and for APCo and WPCo on a merged basis. LAI recognizes that this IRP would be developed within the context of significant changes in the PJM market and American Electric Power's (AEP's) current restructuring efforts in light of competitive market pressures and near-term capital requirements for environmental compliance. We can also support CAD on other important merger issues, if requested.

LAI is prepared to begin work immediately. CAD can rely on our IRP and merger experience, along with our familiarity with the key issues behind the APCo / WPCo merger. We are up to date with the latest developments in AEP's filings to the Ohio PUC and the Federal Energy Regulatory Commission to spin off Ohio Power Company's generation assets and to reconfigure the AEP East Pool, including the Ohio PUC's disapproval of the Settlement Agreement last week. We regularly monitor PJM's market dynamics and have been following AEP's planned response to stricter emission limits for its coal plants.

LAI has been active in PJM for more than twenty years on a variety of matters, including PJM's Reliability Pricing Model, IRP work for both the Maryland PSC and the Virginia SCC, and wholesale procurement options. We follow PJM's Regional Transmission Expansion Planning Process in order to stay abreast of potential changes to wholesale power flows and prices across the region, and we monitor the Renewable Portfolio

Standards for West Virginia and neighboring states. We advise many state commissions and regulatory agencies on these developments and other complex power matters pertaining to wholesale market design and system operations, including locational market effects ascribable to changes in load, generation resources, transmission infrastructure, market regulations, and system planning criteria.

Given the many uncertainties that could affect the operating conditions of APCo and WPCo, we intend to model the impacts of the merger under base case assumptions and other defined scenarios to highlight the key forecast uncertainties. LAI regularly prepares such simulations, giving us the knowledge and experience to perform a detailed assessment of the assumptions, methodology, analyses, and conclusions regarding the IRP for the two base cases (with and without the merger) and then under scenarios based on alternative long-term fuel prices, environmental compliance standards, changes in RPS requirements over time, and the pending corporate restructuring and replacement of AEP's Pool Agreement with a new Power Cost-Sharing Arrangement. We would be pleased to review and define the appropriate IRP scenarios with you. Dr. Ellen Cool, our Responsible Officer, will provide expert testimony to support our IRP analysis and assist you in evaluating other IRP testimonies presented by the two operating companies and by other parties.

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We have no conflicts of interest that would impair our ability to meet your study goals and objectives through the term of this engagement. Please do not hesitate to contact me at (617) 531-2818 x26 or at [sgp@levitan.com](mailto:sgp@levitan.com) if you have any questions regarding our capabilities and study approach, or require additional information.

We look forward to the privilege of this engagement. Thank you for considering LAI.

Sincerely yours,



Seth G. Parker  
Vice President & Principal