

## Senior Consultant

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*Integrated Resource  
Planning,  
Project Development,  
Strategic Advising,  
Economic and Financial  
Evaluation, Regulatory  
Structure, Project  
Agreements,  
Socioeconomics,  
Pro Formas*

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## Education

B.S., Economics, Northwest  
Missouri State University, 1983  
M.S., Economics, Bowling Green  
State University, 1984

## Experience

1984 – present

## Joined Black & Veatch

1990

Mr. Wynne, an Economist involved with integrated resource plan development, has worked on five continents and traveled to more than 20 countries since joining Black & Veatch in 1990. He is the most experienced analyst with Black & Veatch in terms of international studies. A financial specialist, Mr. Wynne has performed and directed numerous studies in the areas of system planning, pro forma analysis, socioeconomic impact analyses and has developed power purchase agreements. He has trained many utility and Black & Veatch analysts in areas related to least-cost planning, pro forma analysis and socioeconomics.

Mr. Wynne has performed extensive analysis in the areas of production costing evaluations, risk assessments, the development of capacity solicitations, socioeconomics and in the identification of sources of project financing. Prior to joining Black & Veatch, he was a Senior Economist at the Indiana Utility Regulatory Commission, Economist for the Indiana Department of Commerce and also has taught college economics.

## Representative Project Experience

### *Socioeconomic Analysis, Potential Natural Gas Pipeline, State of Alaska*

Mr. Wynne served as Lead Economist for a detailed socioeconomic analysis associated with the potential construction and operation of a future natural gas pipeline originating in Alaska. The analysis determined the employment and income benefits arising in the US and Alaska from the project, based on assumed input purchases and spending patterns. The analysis also estimated the economic benefit from the lower natural gas prices resulting from the pipeline project.

### *Renewable Energy Capacity Solicitation, Western Farmers Electric Cooperative, Oklahoma*

Mr. Wynne was Project Manager for a capacity solicitation request for proposals (RFP) for renewable energy capacity. In this capacity, he was responsible for writing the RFP, responding to questions, evaluating the results and making a recommendation. The result of the solicitation was the signing of a renewable energy purchase agreement by WFEC and the leading bidder.

### *Conventional Resource Capacity Solicitation RFP, Western Farmers Electric Cooperative, Oklahoma*

Mr. Wynne was Project Manager for a capacity solicitation request for proposals (RFP) for conventional resources. In this capacity, he was responsible for writing the RFP, responding to questions, evaluating the results and making a recommendation. The result of the solicitation was a recommendation to WFEC regarding the optimal mix of resources on the system.

### *Distributed Generation Capacity Solicitation RFP, Western Farmers Electric Cooperative, Oklahoma*

Mr. Wynne was Project Manager for a capacity solicitation request for proposals (RFP) for distributed generation capacity. In this capacity, he was responsible for writing the RFP, responding to questions, evaluating the results and making a recommendation. He also drafted major terms and

conditions to be transferred to a power purchase agreement. In addition, he led a market pricing and retirement analysis in which regional market-clearing prices were estimated using a market model. The optimal retirement date of units was evaluated based on economic returns.

### ***Socioeconomic Analysis, Confidential Nuclear Licensing Project, Southern United States***

Mr. Wynne served as Lead Economist for a detailed socioeconomic analysis associated with the COLA process for a large utility in the Southern United States. He was responsible for evaluating the impacts of construction and operation in several economic areas, including employment, income and demand for the local community and services. He also wrote significant portions of the COLA.

### ***Socioeconomic Analysis, Confidential Nuclear Licensing Project, Northern United States***

As Lead Economist for socioeconomic analysis related to the COLA process for a large utility in the Northern United States, Mr. Wynne evaluated the impacts of construction and operation on economic areas that included employment, income and demand for the local community and services. In this capacity, he was responsible for writing significant portions of the COLA.

### ***Confidential Project, Botswana***

As Project Economist, Mr. Wynne was responsible for the development of the project pro forma for a multi-unit coal project in Botswana. The pro forma involved multiple currencies, multiple tranches of debt and multiple units. A significant amount of interaction with technical, financial and legal advisors was required to develop the pro forma, which was part of a bankable feasibility study produced by Black & Veatch and other consultants.

### ***Confidential Project, Southeastern United States***

Mr. Wynne served as the Socioeconomist responsible for the development of a socioeconomic impact analysis of the addition of a nuclear power plant at an existing site. His analysis included assessing the impact of the project on income, employment and the general infrastructure of the project vicinity during the construction and operational phases of the project.

### ***Capacity Solicitation RFP, Brazos Electric Cooperative***

As Project Economist, Mr. Wynne was responsible for developing a capacity solicitation RFP for long-term power supplies to meet a growing utility demand. He also was responsible for drafting the RFP and coordinating with the utility to evaluate bids.

### ***Confidential Project, Mozambique***

Mr. Wynne, serving in the capacity of Project Economist, was responsible for the drafting of several project agreements for a future coal project in Mozambique. The scope of work included the drafting of power sales, operating, fuel supply and implementation agreements. He also was responsible for the review of the pro forma and several other economic evaluations associated with the project.

### ***Supply-Side Planning Study, City of Columbia, Missouri***

Served as Project Manager for a supply-side planning study that evaluated self-build and purchase options. The study required establishing a production costing model for the City, developing a capacity solicitation RFP, evaluating bids and assisting the City during negotiations.

### ***Integrated Resource Plan, Kaua'i Island Utility Cooperative, Kaua'i***

Mr. Wynne was Project Manager for an integrated resource plan (IRP) for the island cooperative, KIUC. The IRP had a heavy emphasis on renewable energy options and energy efficiency measures. More than 50 supply-side options were evaluated. The study resulted in an IRP filing before the Hawaii Public Utility Commission. The IRP required significant interaction with the KIUC Board and an Advisory Committee, which was comprised of several local citizens and customers.

### ***Pre-feasibility and Feasibility Study, Confidential Client, Mexico***

As Project Manager for a pre-feasibility and feasibility study evaluating the technical and economic feasibility of a coal-fired power plant in Mexico, Mr. Wynne was involved in the development of capital cost and performance estimates for a number of coal-fired options. This required an evaluation of the characteristics of the coal and to evaluate design impacts; an evaluation of alternative sties; and the development of a report that will be used as part of a future capacity solicitation. The project consisted of a multi-disciplined team of environmental specialists, fuel experts, design engineers and cost estimators.

### ***System Expansion Planning Study, Oman Ministry of National Economy, Oman***

Mr. Wynne was Project Manager for a system expansion planning study that evaluated the least-cost option for the Oman power system. The study required the development of a detailed production costing model of the Oman system; the development of cost and performance estimates for candidate expansion units, including combined power and water production facilities; and an economic analysis that determined the present worth cost of alternative generation expansion plans.

### ***Feasibility Study, Sacramento Municipal Utility District, California***

Mr. Wynne was Project Manager for a feasibility study that evaluated the ownership options of several types of renewable capacity. The study evaluated tax incentives for various renewable technologies; developed pro forma models showing the cost-of-own versus purchase options; and evaluated risks associated with each ownership option.

### ***Integrated Resource Planning Study, Golden Valley Electric Association, Anchorage, Alaska***

Mr. Wynne was Project Manager for an integrated resource planning study for GVEA that evaluated several self-build, power purchase, demand-side and renewable capacity options in order to determine the least-cost plan for the utility. The project involved a conditions assessment and retirement analysis of existing units, a detailed production costing model of the GVEA system, evaluation of power purchase alternatives and fuel price forecasting.

Results were presented to the GVEA Capacity Expansion Committee and the GVEA Board.

***Long-Term Resource Plan, Western Farmers Electric Cooperative, Anadarko, Okla.***

Mr. Wynne has supported the WFEC in the final preparation of its long-term resource plan to be submitted to the RUS in support of a request for financing of future generation. The process involved performing updates to the detailed production costing model previously developed for the WFEC, which were used to evaluate power purchase and self-build options.

***Capital Cost, O&M and Performance Estimate Study, Louisville Gas & Electric***

Mr. Wynne was Project Manager for a study that developed capital cost, operations and maintenance and performance estimates for use by LG&E in its integrated resource plan document filed with the state commission. The capacity options consisted of more than three dozen conventional (gas, nuclear, coal) and renewable options. The local labor and productivity costs were considered, as were local climate conditions (temperature, elevation, wind speed, etc.), as applicable for the technologies considered.

***Least-Cost Option Plan, City Utilities of Springfield, Missouri***

Mr. Wynne was the Lead Economist responsible for comparing two competing coal-fired power plant options and recommending the least-cost option for City Utilities of Springfield. The units differed with regard to size, ownership, required infrastructure, fuel cost and design. The units were compared on a cumulative present-worth-cost basis, and several sensitivities were performed. The study required ongoing interaction with environmental, fuel, transportation and design specialists. The results were presented to the City Utilities of Springfield Board.

***Economic Impact of Renewable Energy in Pennsylvania***

Mr. Wynne performed economic analysis for the study of a proposed Pennsylvania renewable portfolio standard. The scope included a technology assessment, resource evaluation (including development of cost curves), least-cost portfolio planning and economic impact analysis.

***Utility Formation Economic Evaluation, Viejas Tribal Utility***

Mr. Wynne served as Project Manager for a DOE-funded study to evaluate the economics of utility formation. The study involved the development of a financial model that compared continued operation as a utility customer versus the cost of forming a new tribal utility and installing capacity to meet load requirements. The study also focused on the potential to install cost-effective renewable options and involved a condition assessment and valuation of the existing distribution system.

***Bids Received Evaluation, Dairyland Power Cooperative, La Crosse, Wis.***

Mr. Wynne was the Project Manager responsible for evaluating bids received through a power supply RFP. The evaluation involved a detailed production costing simulation of the DPC system under self-build and alternative power supply options. The approach was devised to comply with the RUS loan requirements and guidelines. Mr. Wynne presented results of the RFP and the

IRP to the RUS in support of DPC's application for financing in a large Midwestern coal-fired power plant.

### *Least-Cost Plan, Basin Electric*

Mr. Wynne was the Project Economist in charge of evaluating the least-cost plan for Basin's western interconnect area. This involved the development of a detailed production costing model and evaluation of costs on a long-term basis in accordance with RUS planning guidelines and requirements. He also wrote the Basin RFP required by the RUS to determine if an alternative to the self-build option was part of the least-cost plan.

### *Internal System Planning Review, Dairyland Power Due Diligence, La Crosse, Wis.*

Mr. Wynne was the Study Manager of an effort to review the internal system planning studies performed by DPC. He evaluated the economic, technical, environmental, transmission, financing and political risks, as well as other risks associated with several alternative expansion plans. The economic evaluation involved detailed production costing of the DPC system in conformance with RUS requirements.

### *Project Evaluation Services, Independence Power & Light, Independence, Mo.*

As Project Manager, Mr. Wynne performed project evaluation services in support of IPL's consideration of equity participation in a coal-based plant to be built by another utility. The project scope included an evaluation of the PPA, load flow studies, discussion of the FERC SMD NOPR and a site visit to evaluate the operational and maintenance practices of the owner.

### *Retirement Study, City of Rochelle, Illinois*

As Study Manager, Mr. Wynne evaluated the economics of retiring an existing power generation facility versus a number of power supply alternatives. The study estimated the cost to keep the unit in commercial operation and considered the environmental issues impacting the decision.

### *Renewables Study, EBRD, London, England*

Mr. Wynne served as Project Manager of an EBRD-funded study that evaluated the potential for renewable energy projects in all 27 countries of operation. Mr. Wynne managed seven subconsultants who assisted with data collection and project evaluation. The projects being evaluated included hydro, biomass, wind, geothermal and solar renewables.

### *Optimum Capacity Additions Study, Western Farmers, Anadarko, Okla.*

Mr. Wynn was the Study Manager for an analysis to determine the optimum capacity addition(s) for the Western Farmers system. Peaking, renewable, and natural gas and coal-fired base load facilities were being evaluated both on a traditional franchised utility basis (least-cost planning with a production costing model) and in the context of a competitive regional market (using the regional model, PROSYM).

In addition, Mr. Wynne prepared and issued an RFP as part of the RUS financing requirements, performed screening and detailed production costing

evaluations of the offers. He recommended a short list and assisted with ongoing evaluations of the options.

### ***Economic Analysis, City of Boulder City, Nevada***

Mr. Wynne was responsible for the economic analysis of a proposed battery storage facility that would use inexpensive hydro power to charge a 10 to 20 MW battery capacity at night and would also discharge during peak hours. The analysis involved bus-bar costs estimates; use of a peak-shaving module to produce adjusted utility loads and estimate benefits; and development of a pro forma analysis to evaluate the overall economics of the project.

### ***Power System Expansion Planning Study, McIntosh 4/ Lakeland Electric, Lakeland, Florida***

Serving in the capacity of Project Economist/Study Manager, Mr. Wynne supervised the modeling and economic analysis in support of a power system expansion planning study performed to evaluate the economics of possible capacity additions for the utility.

### ***Economic and Financial Analysis of Power Projects, Training Course/IIE, Kiev, Ukraine***

Mr. Wynne prepared material and taught a course through the International Institute of Education in Ukraine to 30 Ukrainian students on the economic and financial evaluation of power projects. The topics of the course were centered on pro forma analysis, merchant market pricing, Power Purchase Agreement structure, regulatory rate setting and bus-bar analysis.

### ***Energy Conversion Agreement, Western Farmers Electric Cooperative, Anadarko, Okla.***

As Project Development Advisor/Economist, Mr. Wynne consulted and helped draft the Energy Conversion Agreement for a peaking facility to be operated by the WFEC. In this capacity he also reviewed the EPC agreement and identified areas of risk for the client. Additionally, he performed and supervised detailed project pro forma analysis and made a presentation to the Board that was received with unanimous approval. The unit reached financial closing in December 2000, as well as commercial operation in May 2001.

### ***Bids Received Evaluation, PEGI, Monterrey, Mexico***

As Project Economist/Project Manager, Mr. Wynne supervised the evaluation of bids received in response to a capacity solicitation for a large power plant. He also coordinated with other Black & Veatch disciplines to provide project support in the role of Project Technical Advisor.

### ***Cogeneration Feasibility Study, TUCC, Taiwan***

As Project Manager, Mr. Wynne was responsible for a cogeneration feasibility study that would locate a mid-sized facility in an industrial park in Taiwan. He supervised all the technical and financial work and wrote or reviewed all project documents. In addition, he provided project development support, including the drafting of a project information memorandum to the potential equity partners.

### ***Financial Analysis, Carolina Turkeys, Goldsboro, N.C.***

As Project Development Advisor, Mr. Wynne provided financial pro forma analysis, regulatory risk analysis, project agreement review and consulting services for a proposed biomass cogeneration facility to be located at a large processing facility.

### ***Market Assessment, Bucharest Power and Heat Project, Romania***

Mr. Wynne served as Market Assessment Leader and was responsible for the market assessment of a 250 MW power and district heating project in Romania. The project included an assessment of market rates and deregulation and pro forma analysis. He also was responsible for heads of terms of the project power and heat purchase agreements and developed the strategy for attracting a project sponsor.

### ***Financial Evaluations, EGEM S.A., Peru***

As Project Development Leader, Mr. Wynne performed all financial evaluations to determine the optimal site and configuration of a proposed 150 to 200 MW merchant plant. He pursued a U.S. development partner for EGEM S.A.

### ***Financial Analysis, ElectroPeru, Peru***

Mr. Wynne served as Project Economist and performed the financial analysis of a proposed 200 MW gas-fired combined-cycle plant in Peru. He determined the best site and configuration for the project.

### ***Economic Evaluation, CEMEX TEG Project, Mexico***

As Project Economist, Mr. Wynne was the primary drafter of an RFP for the TEG Project, a 230 MW petroleum coke plant in Mexico. He performed the economic evaluation and rankings of bid and assisted in the review of project agreements.

### ***Request For Proposal, Wisconsin Electric, Wisconsin***

As Project Economist, Mr. Wynne helped write the RFP for the solicitation of 250 MW of peaking capacity. He also drafted the power purchase agreement for the project.

### ***Instruction, USAID-Power Purchase Training Course, Florianopolis, and Brasilia, Brazil***

Mr. Wynne was subcontracted by the USAID-International Institute of Education to co-instruct a two week training course on capacity solicitations and power purchase agreements. The course was presented twice, and students consisted of approximately 60 state and federal utility planners and managers of Brazilian utilities.

### ***Pro Forma Modeling, Kanchana Rice Burner, Thailand***

As Project Economist, Mr. Wynne developed the pro forma model to be used for the financing documents for a rice husk burner in Thailand. He evaluated the standard offer for Small Power Producer PPA to develop pro forma inputs and identified the socioeconomic impacts of the project.

### ***Swaziland-Mozambique Interconnector, Swaziland Electricity Board***

Mr. Wynne served as Project Economist and performed the economic evaluation of a proposed transmission line interconnector between Swaziland

and Mozambique. The study required a demand forecast and production costing evaluation of the SEB system to determine if the interconnector was part of the least-cost option. Mr. Wynne also performed socioeconomic impacts analysis and developed a draft of the Interconnection Agreement between the two national utilities for the line. In addition, he developed a draft of the EPC Request for Proposals package for the project.

### *Technical Advisory Services, ZESA, Zimbabwe*

Mr. Wynne served as Project Economist in support of Black & Veatch's role as the project technical advisor for ZESA. In this capacity, Mr. Wynne performed several major roles in support of the development of the first-ever limited recourse IPP project in Zimbabwe. He prepared the initial project financial pro forma and rate impact estimates; prepared the tariffs of the Power Purchase Agreement; and was a drafter on the remainder of the agreement.

Mr. Wynne represented Black & Veatch in the PPA and Asset Transfer Agreement negotiations and advised the client on the impact and reasonableness of the proposed provisions in the agreements. He also assisted with the pricing formulas in the Fuel Supply Agreement and worked with the project financial advisor and legal advisor on an ongoing basis to develop the project and other project agreements.

### *Financial Analysis, NPC Project Development, Tanzania*

As Project Economist, Mr. Wynne developed the project pro forma for a planned coal-fired project in Tanzania. In addition, he provided an estimate of the project's net national benefits.

### *Technical Advisory Services, Hongsai IPP Proposal, Laos, Thailand*

Mr. Wynne served as Project Economist in support of Black & Veatch's role as the technical advisor for the developer. In this capacity, he performed preliminary pro forma evaluations for a proposed 2 x 350 MW power plant to be constructed in Laos and sold to EGAT in Thailand. Mr. Wynne helped draft the EPC agreement and EPC RFP for the project and also provided an economic risk evaluation of the project PPA, which was based on the EGAT model agreement.

Mr. Wynne provided negotiation assistance to the Client during general and technical negotiations with EGAT. He worked with the financial and legal advisors during the redraft process and provided an economic and technical review of the draft of the Fuel Supply Agreement.

### *Bolivia Export Market Study, Bolivia*

As Project Economist, Mr. Wynne evaluated the potential for power exports from Bolivia to neighboring countries, including Brazil, Argentina, Chile and Peru. The objective was to determine the cost of power delivered to these markets, the competitiveness of these delivered costs with other alternatives and the institutional and regulatory structure in the export countries.

### *Market Assessment, Mato Grosso, Brazil*

Mr. Wynne served as Project Economist and performed an assessment of the market demand and supply conditions in Mato Grosso, Brazil. In addition, he

provided an analysis of the regulatory structure in the country. The purpose was to determine the need for power and the price at which the client's proposed project could compete in the market.

### ***Feasibility Study, Maju Holdings, Malaysia***

As Project Economist, Mr. Wynne performed pro forma simulations for a proposed 4 x 500 MW coal-fueled plant. The simulations compared the cost to the utility under a lease versus build-own-operate structure.

### ***Power Supply Study, NPC, Thailand***

As Project Economist, Mr. Wynne performed the pro forma evaluations and derived cost estimates to determine the optimal expansion of the NPC system. He also evaluated the financial returns of expanding the system under alternate cogeneration configurations.

### ***Power Purchase Agreement Review, MDX Power Plant Feasibility Study, Thailand***

As Project Economist, Mr. Wynne reviewed the Power Purchase Agreement for technical and economic risk and worked with the financial and legal advisors to develop a markup of the model Power Purchase Agreement to be part of the project proposal. He also recommended economic design parameters for the BVI design team for a proposed natural gas IPP plant.

### ***Power Purchase Agreement Review, Raiwind Feasibility Study, Pakistan***

As Project Economist, Mr. Wynne reviewed the Power Purchase Agreement from a technical and economic risk standpoint and helped perform the pro forma evaluation for a proposed IPP project.

### ***Pro Forma Evaluation, Hemaraj Prefeasibility Study, Thailand***

Serving in the role of Project Economist, Mr. Wynne performed a pro forma evaluation for a proposed IPP project that would sell power to an industrial estate and to the grid.

### ***Socioeconomic Analysis, NCEMC EIS, North Carolina***

As Project Economist, Mr. Wynne performed a socioeconomic analysis on two proposed sites as part of an environmental impact statement of a proposed gas-fueled generating plant.

### ***Socioeconomic Analysis, Midwest Energy, Council Bluffs, Iowa***

Serving in the role of Project Economist, Mr. Wynne performed a socioeconomic analysis on two proposed sites as part of an Environmental Impact Statement of a proposed gas-fueled generating plant.

### ***NTP Pre-feasibility Study, Navajo Tribal Area, Arizona***

Mr. Wynne, Project Economist, performed two pre-feasibility studies to determine the cost-effectiveness of constructing a transmission line in the Four Corners area to Nevada/California.

### ***Siting Study, NESDB, Thailand***

As Project Economist, Mr. Wynne performed a socioeconomic evaluation of seven prospective power plant sites and estimated the impacts of plant construction and operation.

***Demand-Side Programs Evaluation, City Public Service, San Antonio, Texas***

Serving as Project Economist, Mr. Wynne performed an evaluation of demand-side programs and recommended programs for implementation. In addition, he developed an implementation plan for adopted demand-side programs.

***Request for Proposal, KMEA, Kansas City, Mo.***

Mr. Wynne, Project Economist, wrote an RFP for the Kansas Municipal Energy Agency (KMEA) that sought to secure a cost-effective power supply for the KMEA member cities. He evaluated the proposals received and participated in the negotiations for power purchases.

***Pro Forma Evaluation, Niagara Mohawk, Syracuse, N.Y.***

As Project Economist, Mr. Wynne performed a pro forma evaluation of industrial self-generation sites to determine the appropriate industrial rate structures that would maintain the utility's competitiveness.

***Grid Operation Code Consultancy, TNB, Kuala Lumpur, Malaysia***

In the role of Project Economist, Mr. Wynne assisted in the development of a Grid Operation Code for TNB.

***Production Costing Modeling, TNB, Kuala Lumpur, Malaysia***

Serving as Project Economist, Mr. Wynne developed a production costing model of the TNB system to evaluate the economics of a power purchase proposal.

***Contract Development, Kuala Lumpur, Malaysia***

As Project Economist, Mr. Wynne assisted in the preparation of a Power Sales Agreement for the purchase of 990 MW of generation capacity.

***Need for Power Document, Cypress Energy Project, Okeechobee, Fla.***

As Project Economist, Mr. Wynne assisted in preparation of the Need for Power document submitted before the Florida Public Service Commission. He also performed the traffic and socioeconomic analysis for the project.

***Socioeconomic Analysis, Sithe Independence Station, Oswego, N.Y.***

Serving in the role of Socioeconomist, Mr. Wynne performed the socioeconomic and traffic analysis for the permitting of a large power plant.

***Contract Development, NAPOCOR, Manila, Philippines***

As Project Economist, Mr. Wynne aided in the development of power buy-back agreements for the purchase of power from small power producers.

***Stanton Energy Center, Orlando Utilities Commission, Florida***

As Socioeconomist, Mr. Wynne presented testimony on the socioeconomic impacts of Stanton Unit 2.

***Stanton Energy Center, Orlando Utilities Commission, Florida***

As Project Economist, Mr. Wynne assisted in the evaluation of IPP bids to determine the most economical supply option for the utility.

*Pro Forma Verification, Black & Veatch, Kansas City, Mo.*

Mr. Wynne, serving as Project Economist, assisted in the verification of Black & Veatch's pro forma model.

*Capacity Solicitation Evaluation, James River Project, Lansing, Mich.*

As Project Economist, Mr. Wynne evaluated the capacity solicitation process of a large utility and provided written and oral testimony before the Michigan Public Service Commission on the proper design of a capacity solicitation.