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CPV Management Biographies

DOUG EGAN

Chief Executive Officer

Doug co-founded CPV with Gary Lambert in 1999; together they raised venture capital funding for the company in a series of separate financings, exceeding \$300 million in total. Under his leadership, CPV has focused on traditional and renewable power generation project development and asset management services for major energy and finance industry clients and investors. Doug provides the strategic direction for the company as it responds to the evolution of a highly dynamic North American market. With more than 30 years in the independent power industry, he is well known to the power, natural gas and financial communities.

Prior to forming CPV, Doug was Senior Vice President for Development at PG&E Generating Company, formerly US Generating Company. At PG&E, he was responsible for non-regulated power project development. He was responsible for the initiation of seven natural gas fired power generation projects and a wind project representing more than 5,000 MW of capacity currently in operation across the United States. Prior to assuming control of PG&E's development program, Doug was Vice President and Regional Executive for their Northeast Region where he supervised six operating IPP projects, including fuel supply and transportation and power sale agreements.

Prior to PG&E, Doug was Vice President of Development at J. Makowski Company of Boston where he was responsible for the acquisition and financial restructuring of Altresco Financial, Inc. Additionally, he held the position of General Counsel for Intercontinental Energy Corporation of Hingham, Massachusetts through the development and construction of two cogeneration projects representing more than 600 MWs. In the early 1980's, Doug worked at the law firm of Murtha Cullina Richter & Pinney in Hartford, Connecticut, representing the Connecticut Resource Recovery Authority developing and financing several waste-to-energy facilities.

Doug is a graduate of Dartmouth College and Cornell Law School.

GARY LAMBERT

President

Gary co-founded CPV in 1999 and has helped raise equity funding in three separate financings for CPV's general business activities, exceeding \$350 million in total. Gary has overall management responsibilities for CPV's Braintree office and is a member of the Board of

Managers. Today, Gary also plays a significant role in building and directing the business activities of CPV including project development and asset management as well as raising financing for various corporate and project needs. Gary has over 20 years of experience in the competitive energy industry.

Prior to CPV, Gary was a Vice President in the project development group of PG&E Generating Company, formerly US Generating Company. His responsibilities included the oversight of electric development and acquisition efforts throughout the United States.

Prior to PG&E, Gary was a manager of development at J. Makowski Associates and prior to that, worked for both Catalyst Energy Construction, Inc. and its spin-off Hydro Power Corporation, developing and overseeing construction of 1 to 5 MW hydroelectric projects. Gary holds a Bachelor of Science degree in Mechanical Engineering from the University of Massachusetts at Amherst and is a licensed Professional Engineer in the Commonwealth of Massachusetts.

JOHN FOSTER**Executive Vice-President**

John is a part of the three person executive management team that oversees all of the Company's affairs. He has managed a number of the Company's corporate development and major transaction activities, including, most recently, the Sentinel project development and the SkyPower wind development pipeline acquisition. He spearheaded the arrangement of \$100 million in funding from Warburg Pincus in 2006.

Prior to joining CPV, John was a founding senior manager at InterGen from 1995 to 2005. From 2002 until 2005, John spearheaded the restructuring and subsequent sale of InterGen, closing \$4.5 billion in development, acquisition, divestment and restructuring transactions. From 1995-2001, John was the regional business executive charged with establishing and managing InterGen's Latin American business operations. In this capacity, John had profit and loss responsibility for the development, construction and operation of 5 power generation related assets with an aggregate value of \$3 billion.

Prior to joining InterGen, John served as General Counsel to J Makowski Company of Boston (where he was a colleague of CPV's founders, Doug Egan and Gary Lambert). In this capacity, he oversaw legal activities for development, acquisition and operations for the Company both domestically and abroad. He also coordinated the legal efforts in connection with the sale of Makowski to PG&E and Bechtel in 1995.

Prior to Makowski, John was an attorney at the D.C. law firm, Dickstein, Shapiro and Morin. In this capacity, John represented the developers of a series of early QF projects and helped pioneer the legislative and regulatory changes that facilitated the emergence of exempt wholesale generators and market-based rates in the early 1990s. John is a graduate of Carleton College and Vanderbilt University Law School and is a member of the District of Columbia Bar.

PETER PODURGIEL

Senior Vice-President, Project Development

Peter has been with CPV since its inception and has filled a number of critical positions. Currently, Peter is responsible for CPV's \$200 million fossil development portfolio and leads CPV's development initiatives in the US and Canada.

Prior to heading up CPV's fossil development program, Peter was one of the primary architects of CPV's Asset Management strategy and business development. Through his leadership, Peter created significant value for CPV's clients during a period of unprecedented industry challenges and seized economic opportunities vital to CPV's nationwide growth. Due to his pioneering execution of complex restructurings, today CPV is widely recognized as the leader in IPP crisis and turnaround management.

Previously, Peter led the development and sale of CPV's Atlantic Power Project, a 250 megawatt combined-cycle power project in Florida. Peter also recorded noteworthy successes in both the energy and commercial development industries prior to CPV. At US Generating Company, New England Development and The Pyramid Companies, his accomplishments include developments of more than 2,000 megawatts of power projects and more than 8 million square feet of retail real estate. Peter holds a Bachelor of Science degree in Finance from Fairfield University.

PAUL BUCKOVICH

Senior Vice-President, Finance

Paul joined CPV in 2001 and is responsible for the financial structuring of new development projects, management of existing project capitalization efforts, and any debt financing associated with the company's acquisition-related endeavors. Paul also oversees the financial management of the assets managed by CPV's Asset Management group. Most recently, Paul led the financing of the 152 MW, \$319 million CPV Keenan II wind farm, the 800MW, \$900 million CPV Sentinel gas-fired project, and the 166 MW, approximate \$300 million CPV Cimarron wind farm.

Paul has 20 years of experience in the energy sector starting with the J. Makowski Company, and just prior to joining CPV as Director of Finance for InterGen where he managed the \$570 million debt financing of the 1,200 MW Cottonwood Power Project in Texas and co-managed the \$350 million debt financing of the 600 MW Bajio Power Project in Mexico. Paul gained his finance training with Bank of Boston where he managed a \$400 million credit portfolio.

Paul holds a Bachelor of Arts degree from Wesleyan University.

JOHN MURPHY

Senior Vice-President, Engineering and Construction

John has over 25 years of experience managing the successful installation of power plants throughout the United States.

John has negotiated 20 turnkey Engineering, Procurement, and Construction Contracts throughout his career. He has successfully installed power plants in all regions of the United States in both union and non-union environments. Additionally, John has installed several facilities throughout Latin America. In 2010 John negotiated the EPC and turbine contracts and oversaw the construction of the 152 MW Keenan wind farm in Woodbridge, OK.

Previous to CPV, as Senior Vice President for Gemma Power Systems, John was responsible for profit and loss on the turnkey installation of 10 power projects ranging in size from a 50 MW peaking facility to a 600 MW combined cycle facility totaling more than 4,000 MW. All of these projects were completed on time, under budget, and went on to operate reliably. Recently, John played a role in the closing of the CPV Sentinel project, and is currently overseeing construction of 165 MW wind farm in Kansas.

John has been responsible for installing the prime movers of every major equipment manufacturer, including ABB, Siemens, Westinghouse, and GE, including both aeroderivative and frame machines.

Throughout his career, John has been dedicated to the successful completion of EPC power projects, starting out as a mechanical field engineer, and subsequently fulfilling the role of project engineer, construction manager, commissioning manager, project manager, project executive, and EPC contract negotiator.

John holds a Bachelor of Science Degree in Mechanical Engineering, from the University of Notre Dame, and a Bachelor of Arts from St. Anselm College.

BRAITH KELLY**Senior Vice-President, External Affairs**

Peter Galbraith Kelly Jr. Esq. (Braith) is Senior Vice-President for External Affairs for CPV. In this capacity, Braith is responsible for overseeing all government affairs and public relations activities for the company across North America. Prior to joining CPV, Braith served as a consultant to nearly every major power generation equipment manufacturer and a variety of developers in North America; advising companies on their government affairs, political outreach and public relations strategies.

From 1986 through 1998, Braith worked on major infrastructure development projects providing finance and government relations counsel to governments and private organizations in the former Soviet Union, Latin America, China and Sub-Saharan Africa. Braith is an attorney who has been very active in politics both in his home state of Connecticut, where he has served as the State Party finance chairman, and nationally, where he has been an active fundraiser for Presidential, Senate, House and gubernatorial campaigns.

DAVE MAGILL**Senior Vice-President, Asset Management**

Dave leads CPV's asset management group, which currently manages the Sentinel, Keenan II and Cimarron projects and seven other power projects in seven power markets totaling over 5500 MW of installed capacity. Working closely with CPV's energy management team, Dave and the CPV asset management team function as the "owner for hire" for these projects; responsible for strategic direction and execution, buying and selling power and fuel, negotiating and managing project contracts, implementing improvement initiatives, managing financing and M&A transactions and maintaining books, records and compliance.

Immediately prior to joining CPV, Dave was Director of Mergers and Acquisitions at AES Corporation, and led transactions that made AES one of the five largest operators of wind power projects in the US. From 1993 to 2003 Dave worked at PG&E National Energy Group (NEG) where he led NEG's mergers and acquisitions group. In this position Dave was instrumental in 15 transactions totaling over \$4 billion, including the \$1.6 billion acquisition of the electric generating business of New England Electric Systems, Inc., the \$1 billion inaugural bond offer by NEG, and the \$275 million purchase of J. Makowski Company.

Dave held various positions, including VP Corporate Development, at Ultramar plc, a medium sized oil company from 1980 through 1992.

Dave is a graduate of Middlebury College (BA Economics) and New York University (MS Accounting), and obtained a CPA license in New York State.

SHERMAN KNIGHT

Senior Vice-President, Energy Management

Sherman leads CPV's origination and energy management team. The origination and energy management team is responsible for originating short-term and long-term physical and financial power and gas transactions to support financing of CPV's natural-gas fired and renewable development businesses. In addition, working closely with CPV's asset management team, Sherman and CPV's energy management team is responsible for the daily interaction between commodity traders, logistics, plant personnel and control areas to maximize gross margins while setting price-risk and operational-risk tolerances for CPV's asset management portfolio.

Prior to CPV, Sherman was Director, Portfolio Management at PG&E National Energy Group where he was responsible for the daily commercial optimization and fuel supply contracting of over 7,000 MW of gas, oil, coal, and hydro capacity.

Sherman holds an MBA from Columbia Business School at Columbia University, a MS in Environmental Engineering from Columbia University and a BS in Mechanical Engineering from Stanford University.

SEAN FINNERTY

Senior Vice-President, Renewable Development

Sean leads the Company's renewable energy program and heads up CPV Renewable Energy Company. He has overall responsibility for the management of CPV REC and has grown the business to be a leader in the development of renewable energy projects in North America. Sean has over 20 years of energy related experience and has been a member of CPV since its inception.

Previously, Sean was employed by PG&E Generating Company where he held positions within the organization's Development Group and Regulatory Affairs Department. He was involved in project development and acquisitions as well as regulatory policy. Sean also worked at the Massachusetts State Senate Post Audit and Oversight Bureau where he was involved in the development of policies affecting the electric power industry.

Sean holds an MBA from the Sawyer School of Management at Suffolk University and a BS in Resource Economics from the University of Massachusetts at Amherst.

ROBERT BURKE

General Counsel

Robert has over 20 years of experience representing energy companies in the United States and abroad in numerous contexts; including complex project developments, acquisitions, operations, regulatory matters and financings. As General Counsel, Robert oversees the legal representation of the Company, including its compliance program, and participates in the broad spectrum of the Company's project development activities.

Previously, Robert was an officer of PPL Corporation, serving as Vice President and Chief Counsel for PPL Global, which was responsible for the development, acquisition and financing of energy resources domestically and throughout Europe and Latin America. Prior to joining PPL, Robert was counsel for Mission Energy and was lead counsel in the development and related financings of electric generation projects in New York and Virginia.

Prior to that, Robert was an attorney with Hunton & Williams, LLP, where he represented energy companies before the Federal Energy Regulatory Commission.

Robert holds a JD and MA from the University of Virginia, and a BA from Providence College.

CHRISTOPHER CAREY

Controller

Christopher oversees the companies accounting practices, accounting department, budget preparations, audit functions, risk management, and treasury management. In addition, he directs the preparations of all financial reports, including income statements balance sheets, reports to shareholders, tax returns, and miscellaneous reports for government regulatory agencies. While at CPV, Christopher has worked to create a team that is focused on the increasing needs of both our clients and our internal customers.

Prior to joining CPV, Christopher was Vice President of Finance and Operations with park City Solutions Government Services Group. He was an integral part of the Executive Leadership Team providing financial advice on all aspects of the Government Group's operations. Previously, Christopher was a consultant with Ernst & Young, where he worked on a variety of

transactions including IPO's, Public Debt Offerings, Divestitures, Acquisitions, Reorganizations, SEC filings, and Audits (foreign and domestic).

Christopher holds an MBA from Virginia Polytechnic Institute and State University (Virginia Tech) and a BSBA in Accounting and Finance from Ashland University. In addition, he is a Certified Public Accountant licensed in the state of Virginia.

CPV Project Management Team Biographies

STEVE REMILLARD

Vice President, Development

With over twenty years in the independent power industry, Steve leads CPV's New York thermal development activity, which includes CPV's Valley Energy Center (650MW/\$900 million) in Orange County, New York. He is responsible for the development activities related to the Valley Energy Center, which includes the permitting, commercial agreements, interconnection processes, local and government relations, etc. In 2011, Steve also led the development activities for CPV's Woodbridge Energy Center (660MW, \$800 million), which was selected in NJ's highly competitive procurement process to receive a contract for the plant output. Prior to joining CPV, Steve was with Calpine, a national independent power company. While at Calpine, Steve successfully developed the now operating Ontelaunee Energy Center, which is a 540MW combined-cycle facility and Calpine's first greenfield development project in PJM. Also at Calpine, Steve was responsible for the acquisition of over \$500 million in development projects and the turnaround of an 800MW distressed development project in the southeast. As a Director of Asset Management at Calpine, Steve was responsible for over \$250 million in annual revenue from various Calpine generation assets located in the southeast.

MICHAEL BRUNO

Manager, Development

Michael joined CPV's development team in 2007 after graduating from Massachusetts Maritime Academy with a Bachelor of Science in Marine Engineering. During his tenure at CPV, Michael has played an integral role on the development team of the CPV Valley Energy Center, a 650 MW 2x1 combined cycle project located in Orange County, New York. In addition to supporting the daily development activities ranging from the technical design, obtaining the necessary permits, approvals and commercial agreements, and public relations efforts with the local community and government officials, he has also managed critical development activities; including the electrical interconnect process with the New York Independent System Operator and the Petition to the New York Public Service Commission to obtain a Certificate of Public Convenience and Necessity. Michael has also been involved in numerous other development activities across the US, facilitating CPV's development success with the identification and integration of new business opportunities.

DONALD ATWOOD

Vice President, Development

With over twelve years of experience in the independent power industry, Don has worked on numerous thermal development projects and asset management projects across the United States on behalf of Competitive Power Ventures. Don leads CPV's thermal development activity in Maryland, which includes CPV's St. Charles Energy Center (725MW/\$700 million) in Charles County, Maryland. He is responsible for the development activities related to the St. Charles Energy Center, which includes the permitting, commercial agreements, interconnection processes, local and government relations, etc. Prior to joining CPV, Don worked for Poseidon Resources Corporation, a water and wastewater development company developing projects throughout the United States.

JON DONOVAN**Vice President, Engineering and Construction**

With over twenty years of experience in the power industry, Jon has accumulated substantial experience working on gas fired combined cycle projects such as the Valley Energy Center. Prior to joining CPV five years ago, Jon worked at Shaw, Calpine, Siemens and Parsons. During this time, Jon played a key role in the engineering and construction of dozens of successful combined cycle projects including several projects in New York such as the NYPA Richard M. Flynn Project located in Holtsville, the Brooklyn Navy Yard Cogen project, the Onondaga Cogen project in Syracuse and Bethpage 3. Jon has provided oversight over the technical aspects of the Valley Energy Center Project development over the last 5 years since joining CPV.

DANIEL NUGENT**Vice President, Engineering and Construction**

Having more than 20 years of experience in engineering, construction, operations and general management of energy projects, Dan brings a broad perspective to the Valley Energy Center project. Prior to joining CPV two years ago he has worked for utility, utility subsidiaries and IPPs including PSEG Power, PSEG Global, Noble Environmental Power and John Brown Ltd. Dan has held assignments at multiple facilities throughout the U.S., including several in New York, including the SUNY Stony Brook Cogen project (40MW), the Bethlehem Energy Center (800MW) and six wind power projects in northern and western NY (600+MW). He is responsible for the contracting and construction management activities related to the Valley Energy Center, which includes the power generation facility, electrical interconnect and support services.

JACK BREEN**Vice President, Asset Management**

Jack joined CPV in 2005 and is responsible for asset management of the 360 MW Millennium Power Project, the 1080 MW Athens Generating Facility and the 1092 MW Harquahala Generating Facility as part of the MACH Gen portfolio. Prior to joining CPV, Jack was Vice President at General Electric, Energy Financial Services (EFS) where he was the Asset Manager on the Middlesex Generating Company with a debt and equity exposure of \$54 million and provided management oversight on five combined cycle projects with an exposure of \$1.2 billion. Jack was also part of the Risk Group at EFS that provided due-diligence on acquisitions resulting in an increase of \$1 billion to the energy portfolio in 2004. Before EFS, Jack was the Director of Global Operations at InterGen Energy Services where his team provided operations and engineering expertise at 19 assets located around the world. Jack was the lead negotiator of service and equipment contracts valued at \$1.7 billion on projects in Turkey, United Kingdom, United States and Mexico. Previously, Jack worked in the role of Asset Manager and Independent Engineer at various power project companies firms including Intercontinental Energy Corporation and Raytheon Service Company. He holds a Bachelor of Science degree in Marine Engineering from Massachusetts Maritime Academy and a MBA from Suffolk University.

JOE MICHIEZI**Director, Asset Management**

Joe joined CPV in 2006 and currently provides Asset Management support for the MACH Gen portfolio, which is comprised of 7 Siemens 501G units. While at CPV, Joe worked with Siemens 501F units at Batesville, GE 7FA units at Liberty Electric Power, and with Mitsubishi 501G units at the Covert and Wolf Hollow. Prior to joining CPV, Joe worked for the independent engineering firm, R.W. Beck, Inc., as an Operations and Performance Consultant and for PG&E National Energy Group, where he held engineering positions at power plant sites and corporate offices. Joe's first hand experiences with power plants and working directly with energy marketers gives him unique insights towards the relationship between project financials and operations. Joe focuses on opportunities to improve gross margin and reducing operating expenses while maintaining a high level of plant reliability and safety. Joe has a B.S. in Mechanical Engineering from Worcester Polytechnic Institute.

KENNETH DELL ORTO**Manager, Regulatory Affairs**

Ken joined CPV in 2007 and has over 12 years of experience in the public and private sectors of the energy industry. His responsibilities include the oversight of regulatory and policy affairs affecting CPV's development and asset management activities in the New York, New England and PJM market regions. In addition to advocating for CPV interests in a variety of forums at the state, RTO and federal levels, Ken serves as the primary interface with regional energy trade associations. Prior to this, Ken worked as an Analyst in the Natural Gas Division of the Massachusetts Department of Public Utilities. Ken holds MBA and MS in Finance degrees from the Carroll School of Management at Boston College, as well as a BA in Economics from Boston University.

MARCUS SASS**Vice President, Energy Marketing and Origination**

As Vice President of Origination, Marcus is responsible for marketing CPV's renewable and natural gas-fired development portfolios, as well as originating long term physical and financial power transactions to support financing of these projects. Marcus has over 20 years of proven marketing and business development experience in the energy industry. He has expertise in coal, natural gas and power origination as well as renewable energy development. Prior to joining CPV, Marcus held key marketing positions with PG&E National Energy Group, Duke Energy Trading and Marketing, Progress Energy, and Arch Coal responsible for originating and structuring PPAs, contract management, fuel supply and transportation agreements for both utility and industrial customers. He also has international sales experience negotiating supply agreements with electricity generators and steel producers in Europe, Mexico, Japan, and Brazil. Marcus holds a BA in Business Management and a BA in Economics from North Carolina State University. He has also completed Executive Programs in Finance and Accounting from The Wharton School, University of Pennsylvania and Marketing Management from Columbia Business School, Columbia University.



About TRC

TRC is a leader in providing environmental permitting, engineering, and compliance services for energy-related companies on a national basis. Approximately 50 percent of TRC's annual revenue of over \$415 million is associated with services provided to energy companies. TRC is currently providing consulting support on a broad number of electric generating, electric transmission, and natural gas projects nationwide. TRC provides comprehensive environmental consulting services, including: site selection and critical flow assessment; multidisciplinary licensing for brownfield and greenfield development sites; acquisition due diligence and auditing services; compliance testing; site remediation support; and environmental management system development.

In the past decade, TRC's Energy Practice has successfully permitted over 30,000 MW of power projects nationwide, and has provided operational support at numerous operating facilities. A publicly traded company (NYSE:TRR), TRC is a licensed engineering firm in New York State.

The People at TRC

TRC can draw upon its multidisciplinary staff of over 2,700 scientists, engineers, and program managers to provide timely, cost-effective professional services in the planning, construction, and operation of energy facilities. TRC's offices in New York, are located in: New York City, Jericho, Hawthorne, Clifton Park, Ithaca, Liverpool, Williamsville, and Chili. Approximately 580 of TRC's staff are based in New York. With a thorough understanding of federal, state, and local environmental regulations, as well as the market framework within which energy facilities operate, TRC's professionals assist clients from project conception through comprehensive environmental permitting and project construction, as well as during financial due diligence and operations for the life of the facility.

TRC has an acknowledged history of expertise in all areas of:

- Environmental program management
- Regulatory compliance and multidisciplinary permitting
- Air quality analysis, including cumulative impact assessment modeling
- Air quality management
- Noise analysis
- Traffic impact assessments
- Visual impact studies

- Water resources management
- Site selection and permitability analysis
- Environmental due diligence
- Public hearing and expert witness testimony
- Pollution control engineering
- Environmental and health risk assessment
- Natural and cultural resources management
- Air compliance testing
- Site/civil, electrical, and transportation engineering

Extensive NY Experience

TRC has extensive experience in successfully permitting power plant projects throughout the State of New York, including simple-cycle and combined-cycle plants. TRC has permitted over half of the power projects developed in New York over the last decade.

Table 1 lists the New York power projects that TRC has permitted, the majority of which are operating. TRC permitted three of the four large power plant projects built in New York City since the mid-2000's including NYPA's Poletti Plant, and eight projects located on Long Island to provide power to the Long Island Power Authority. TRC has successfully permitted and/or is currently in the process of permitting several other power plant development projects in New York. TRC has extensive experience with the New York State Environmental Quality Review Act (SEQRA) process, and all other applicable local, state, and federal permit requirements/approvals that are required for construction, start-up, and operation of new and repowered power plants in New York. TRC is currently assisting the New York Power Authority (NYPA) in the oversight of the demolition of the retired generating capacity at the Poletti Station.

Table 1 TRC New York Energy Projects		
Project	Size/Type	Status
New York State – Projects Operating		
Astoria Energy, LLC (Suez Energy) Astoria, Queens	1,150 MW Combined-Cycle	Operating
New York Power Authority Charles Poletti Power Project Astoria, Queens	500 MW Combined-Cycle	Operating

Table 1
TRC New York Energy Projects

Project	Size/Type	Status
KeySpan Energy Ravenswood Facility Queens	250 MW Combined-Cycle/ Cogeneration Facility	Operating
Caithness Long Island Energy Center Brookhaven, Suffolk County	346 MW Combined-Cycle	Operating
Pinelawn Power LLC Babylon, Long Island	79.9 MW Simple/Combined-Cycle (GE LM 6000)	Operating
PPL Global Edgewood Generating Facility Edgewood, Long Island	79.9 MW Simple-Cycle (GE LM 6000)	Operating
PPL Global Shoreham Generating Station Shoreham, Long Island	79.9 MW Simple-Cycle (GE LM 6000)	Operating
Equus Power LLC Village of Freeport, Long Island	50 MW Simple-Cycle (GE LM 6000)	Operating
Freeport Electric Plant No. II Village of Freeport, Long Island	47 MW Simple-Cycle (GE LM 6000)	Operating
KeySpan Energy Development Corporation Port Jefferson Energy Center Village of Port Jefferson, Long Island	79.9 MW Simple-Cycle (GE LM 6000)	Operating
KeySpan Energy Development Corporation Glenwood Landing Energy Center Glenwood Landing, Oyster Bay, Long Island	79.9 MW Simple-Cycle (GE LM 6000)	Operating

Table 1
TRC New York Energy Projects

Project	Size/Type	Status
Other Power Projects Permitted in New York		
CPV Valley Energy Center Wawayanda, New York	640 MW Combined-Cycle	Comprehensive Environmental Permitting in final stages
Heritage Station Scriba, Oswego County	800 MW Combined-Cycle	Article X and Comprehensive Environmental Permitting
Bowline Unit 3 Mirant Bowline LLC Haverstraw, Rockland County	750 MW Combined-Cycle	Article X and Comprehensive Environmental Permitting (Under Construction)
Indian Point Peaking Facility Village of Buchanan, Westchester County	360 MW Simple-Cycle	Article X and Comprehensive Environmental Permitting
Brookhaven Energy Project Brookhaven, Suffolk County	250 MW Combined-Cycle	Article X and Comprehensive Environmental Permitting
Calpine Wawayanda Energy Center Wawayanda, Orange County	540 MW Combined-Cycle	Article X and Comprehensive Environmental Permitting
Calpine Stony Brook Energy Center 2 Brookhaven, Suffolk County	79.9 MW Simple/Combined- Cycle (GE LM 6000)	SEQR and Comprehensive Environmental Permitting
Medford Energy Medford, Suffolk County	79.9 MW Simple/Combined- Cycle (GE LM 600)	SEQR and Comprehensive Environmental Permitting
Spagnoli Road Energy Center Huntington, Suffolk County	300 MW Combined-Cycle	Article X and comprehensive environmental permitting
Kings Park Energy Smithtown, Suffolk County	300 MW Simple-Cycle (GE LM 6000)	Article X and Comprehensive Environmental Permitting
TransGas Energy Facility Borough of Brooklyn, New York City	1,100 MW Combined-Cycle	Article X and Comprehensive Environmental Permitting

Table 1
TRC New York Energy Projects

Project	Size/Type	Status
Brooklyn Navy Yard Cogeneration Partnership Borough of Brooklyn, New York City	286 MW Cogeneration	Comprehensive Environmental Permitting

TRC New York ISO Study Experience

TRC is one of a select number of firms that have been qualified by the New York Independent System Operator (NYISO) to prepare on behalf of the NYISO electric grid interconnect studies for power generation projects. TRC's systems work includes preparation of feasibility studies, system Reliability Impact Studies (SRIS), and facility studies. On behalf of the NYISO, TRC conducted the grid interconnection facility study of the CPV Valley Energy Center. Renewable energy projects that TRC prepared facility or SRIS studies for the NYISO include: Howard Wind, High Sheldon Wind, and Western Door Wind.

GLENN HARKNESS, PE

EDUCATION

M.S., Regional Planning, Cornell University, 1971

B.S., Civil Engineering, Worcester Polytechnic Institute, 1969

PROFESSIONAL REGISTRATIONS

Registered Professional Engineer, Massachusetts, #28770, 1975

TECHNICAL SPECIALTIES

Mr. Harkness has more than 35 years of experience encompassing:

- Energy Project Development Management
- Site Selection and Evaluation
- Corridor Selection and Multimedia Permitting
- Multidisciplinary Environmental Permitting
- Expert Witness Testimony

REPRESENTATIVE EXPERIENCE

Competitive Power Ventures – CPV Valley Energy Center – NY (Principal In Charge)

Principal In Charge Project for the environmental permitting of the 650 MW gas combined cycle generation facility being developed in New York State. The \$700 million capital project will supply electricity to the lower Hudson River Valley and New York City load centers. Key permitting activities completed include preparation of the State Environmental Impact Statement (EIS), air quality permits, and U.S. Army Corps of Engineers regulatory submittals.

PPLG LIPA Peaking Facilities – NY (Project Manager)

Project Manager responsible for the environmental permitting of PPL Global's electric generation peaking facilities built within the Long Island Power Authority's service area. Over 300 MW of peaking capacity were permitted and built in direct response to the NYS Governor's directive so as to avoid any potential of electric system failure. TRC's responsibilities included obtaining required State and local community environmental permits.

Competitive Power Ventures, Inc. – VA, FL, and GA (Principal-in-Charge)

Principal-in-Charge for the development oversight management of a 530 MW combined cycle gas-fired power generation facility located in Fluvanna County, Virginia, and several 250 MW facilities in Florida and Georgia. Responsible for all environmental investigations, studies, reports, and permit applications required for the siting these facility on both rural and "brown" field sites involving a variety of siting opportunities and constraints. Has provided expert presentations in County hearings concerning environmental evaluations conducted in support of the development of the projects.

SCS Energy, L.L.C. Astoria Energy Project – Queens, NY (Principal-in-Charge)

Principal-in-Charge for the proposed development of a 1000 MW combined cycle power generation facility located in Queens, New York. Provided key strategic environmental consulting and leadership on complex siting issues and permit applications, including the comprehensive energy siting regulations under Article X of New York State's Public Service Law. Work tasks completed to date include preparation of the development feasibility analysis, submittal of Public Service Commission application for certification and environmental permits, assistance in securing developing financing, and ongoing coordination with the project's EPC contractor. Project construction is scheduled to start April 2002.

JMC Selkirk, NY, Cogeneration Facility, Environmental Permitting – Selkirk, NY (Project Manager)

Project Manager of the environmental permitting of a two-phase 320 MW natural gas turbine cogeneration facility on the General Electric Selkirk, NY plastics manufacturing complex. Directed preparation of the Environmental Impact Statement, PSD air permit and all water and natural resource related approvals. Both phases were completed and built on schedule.

U.S. Generating Company, Environmental Permitting/Due Diligence – East Syracuse, NY (Project Manager)

Prepared environmental permits and due diligence documentation to support developing and financing of a 79 MW natural gas cogeneration facility. Interacted with bank consortium legal counsel to support preparation of their opinion documents for project.

IBM, Plant Expansion – Endicott, NY (Project Manager)

Project Manager for site assessment and environmental compliance audit study of a major new complex being developed by IBM. Technical scope included evaluation of Federal (EPA, Corps of Engineers), state and municipal environmental and land use regulations.

New York State Urban Development Corporation, Environmental Impact Statements – Lower Manhattan, NY (Project Manager)

Responsible for the environmental evaluation for the Battery Park City project in Lower Manhattan. The impact assessment of the 16,000 residential units and 6,000 square feet of commercial development was prepared in conformance with the New York State Environmental Quality Regulations. The EIS and Air Quality Indirect Source permit was approved by state and local agencies. As part of the impact analysis, travel demand forecasts were prepared that reflected project development and reconstruction of the West Side Highway Corridor. Transportation systems evaluated included highway, rapid transit and commuter rail.

**IBM Corporation, Environmental Impact Statement – East Fishkill, NY
(Project Manager)**

Project manager for the EIS for a 1.2 million square foot laboratory and office development for IBM in East Fishkill, New York. Prepared the EIS pursuant to New York State Environmental Quality Review (SEQR) regulations. Key technical issues included water quality, traffic, air, land use and infrastructure. The EIS was approved on schedule by participating state, county, and local agencies.

EXPERT TESTIMONY

- Connecticut Energy Siting Council
- New Hampshire Energy Facility Site Evaluation Committee
- Massachusetts Energy Facilities Siting Board
- New York State Board on Electric Generation Siting and the Environment
- N.Y.S. Department of Environmental Conservation
- Private Sector Clients During Court Testimony
- Federal Energy Regulatory Commission
- VA State Corporate Commission Energy Testimony.

On August 31, 2001, submitted prepared direct testimony in the CPV Cunningham Creek LLC proceeding, Case No. PUE0104077. On December 26, 2001, I submitted rebuttal testimony in the same proceeding. Then, on February 4, 2002, I submitted prepared direct testimony for the previous application for this Project, which was Case No. PUE-2002-00075

LAURA L. LEFEBVRE, PE, TURP

EDUCATION

M.S., Environmental Studies, University of Massachusetts, Lowell, 1992

B.S., Chemistry, University of Massachusetts, Lowell,

Natural Resources and Chemistry, University of Maine, Orono

PROFESSIONAL REGISTRATIONS

Professional Engineer, Massachusetts, (#46276)

General Practice Toxics Use Reduction Planner, Massachusetts, (#X240370),

AREAS OF EXPERTISE

Ms. Lefebvre has 20 years of consulting experience encompassing:

- Comprehensive Environmental Permitting and Compliance – energy (fossil fuel, renewable energy, electric transmission, natural gas), infrastructure, industry
- Environmental critical issues and permitting assessments of capital development projects (energy)
- Spill Prevention, Control and Countermeasure Plans (SPCC)
- Stormwater Pollution Prevention Plans
- Toxic Use Reduction Plans
- Public Involvement

REPRESENTATIVE EXPERIENCE

Ms. Lefebvre is a Senior Project Manager at TRC and specializes in managing large, complex projects involving environmental impact assessments and multi-media environmental permitting, including SEQRA, MEPA, NEPA, wetlands and waterways, Natural Heritage and Endangered Species Program, Coastal Zone Management, Section 106 of the National Historic Preservation Act, Massachusetts Contingency Plan (MCP), U.S. Army Corps of Engineers, site investigation and remediation, and many other environmental permitting areas. Types of projects range from permitting major energy facilities (630 MW power plant, \$800 million projects) to state and municipal facilities.

CPV Valley Energy Center – Wawayanda, NY (Project Manager)

Ms. Lefebvre serves as Project Manager for the comprehensive environmental permitting for construction and operation of a new 630 megawatt (MW) combined cycle power plant in Wawayanda, New York. She directed multi-disciplinary project team to assess impacts to air quality, land use and zoning, community resources, cultural resources, aesthetic and visual resources, socioeconomic and environmental justice, traffic and transportation, noise, infrastructure, soils and geology, natural resources, water resources and storm water management, and several other topics. Ms. Lefebvre directed preparation of a comprehensive State Environmental Quality Review (SEQR) Environmental DEIS and FEIS, and New York State Department of Environmental Conservation (NYSDEC) state air and State Pollutant Discharge Elimination System (SPDES) permit

applications. TRC also supported the project team in securing local and county permits.

**Pinelawn Power LLC, Environmental Permitting – Babylon, NY
(Project Manager)**

Ms. Lefebvre served as Project Manager for comprehensive environmental permitting for construction and operation of a new 79.9 megawatt (MW) combined cycle power plant in West Babylon, New York. Responsible for evaluating impacts to air quality, land use and zoning, community resources, cultural resources, aesthetic and visual resources, socioeconomic and environmental justice, traffic and transportation, noise, infrastructure, soils and geology, natural resources, water resources and stormwater management, and several other topics. Responsible for preparation of a comprehensive State Environmental Quality Review (SEQR) Environmental Assessment and New York State Department of Environmental Conservation (NYSDEC) state air and State Pollutant Discharge Elimination System (SPDES) permit applications. Assisted with community outreach and open house activities, prepared detailed responses to comments provided during and following the NYSDEC public hearing, and successfully negotiated with NYSDEC to ensure acceptable air and SPDES permit conditions. Successfully secured all State environmental permits on an accelerated schedule of less than three months, allowing client to begin construction of the project in fulfillment of its contract with the Long Island Power Authority to help meet Long Island's (LIPAs) urgent power needs for the summer of 2005.

Developed Best Management Practices Plan and Stormwater Pollution Prevention Plan (SWPPP) as required by the Industrial SPDES Permit. Developed permit compliance tracking tables for the owner, to assist in tracking and compliance of permit and regulatory requirements prior to startup and during operation of the plant. Also, assisted in review of air emissions testing protocols reviews to ensure compliance with the Air Permit.

Astoria Energy, Environmental Permitting – Queens, NY (Deputy Project Manager)

Ms. Lefebvre served as Deputy Project Manager for the environmental permitting of the Astoria Energy Project. She coordinated environmental permitting for 1,000 MW combined-cycle facility in Astoria, New York. Coordinated and managed multi-disciplined investigations for Article X Application. The Astoria Energy Project is the largest greenfield project in New York City to receive New York State Department of Public Service Article X certification and NYSDEC permits since deregulation. TRC completed the Article X and NYSDEC draft approval process, including hearings and settlement negotiations, in less than 15 months from filing of applications.

Freeport Electric Department, Equus II Energy, LLC – Village of Freeport, Town of Hempstead, Nassau County, NY

Assisted in development of SEQRA documentation for the fast-track development of two 47 MW natural gas Simple Cycle GE-LM6000 Combustion Turbine Facilities. One unit is a Village of Freeport load serving unit and one unit is a LIPA load serving unit.

LIPA Fast Track Projects, Long Island

Assisted in preparation of SEQRA documentation for LIPA Fast Track Projects: 79.9MW PPL (J-Power) Edgewood Energy in Town of Islip, Suffolk County, NY and 79.9MW PPL (J-Power) Shoreham Energy in Town of Brookhaven, Suffolk County, NY

Kings Park Energy, Environmental Permitting, PPL Global and Babcock and Brown – Long Island, NY (Project Manager)

Managed environmental permitting project for a proposed 300 MW simple-cycle energy facility. Managed multi-disciplined project, involving project engineering and environmental impact studies for: air quality, traffic and transportation, noise, hazardous material management, water and wastewater, geology and soils, wetlands, land use, visual, cultural resources, public health, EMF, socioeconomic, public involvement, local laws, and other areas. Managed large project team of engineers, scientists, public relation specialists, and attorneys.

Directed development of and responsible for all environmental permit applications for facility, including: Air Quality, Stormwater and Wastewater, Hazardous Materials Storage, and Application for a Certificate of Compatibility and Public Need (Article X Application). Article X Application (extensive five-volume document) includes comprehensive analyses of project and environmental impact studies. Received timely completeness determinations from NYSDEC and Siting Board on all permit applications. Negotiated conditions of permits.

PPL Global, Environmental Permitting, Electric Transmission Facility – Long Island, NY (Project Manager)

Project Manager for environmental permitting of 4-mile electric transmission line in Smithtown, NY. Managed multi-disciplinary project, involving engineering and environmental impact studies for: construction, safety, traffic, noise, geology and soils, wetlands, land use, visual, cultural resources, EMF, local laws, and other areas. Responsible for and developed all environmental permit applications, including Application for Certification of an Electric Transmission Facility (Article VII of NYS Public Service Law Application). Received timely completeness determination from Public Service Commission.

Lafarge Building Materials, Inc., SEQR Environmental Assessment Form - Ravena, NY (Project Manager)

Prepared SEQR Environmental Assessment Form and attachments for Tire Derived Fuel Project. Evaluated potential land use, visual, traffic, and noise impacts associated with project. Also, conducted detailed compliance audit of facility operations, focusing on air, SPDES permit, landfill, soil and hazardous waste, oil and hazardous materials storage, etc.

Brookfield Resources - Wawayanda, NY (Project Manager: 2011)

Directed visual impact assessment for proposed recycling facility on a 40 acre site as part of NYSEQR DEIS. Visual assessment was completed in accordance with NYSDEC policy requirements, including visual resource inventory, viewshed mapping, existing conditions photographs, and photosimulations.

Kleen Energy Systems, LLC - Middletown, CT (Project Manager: 2008 - 2010)

Prepared Addendum to Siting Council Application for the addition of a 6.2 million gallon fuel tank farm at the proposed 560 MW combined-cycle facility in Middletown, CT. Provided environmental permitting support, including oversight and coordination of Connecticut Transfer Act compliance submittals, wastewater discharge application submittals, and Air Permit Application submittals.

Mirant, Kendall Square Station - Cambridge, MA (Deputy Project Manager: 1999 - 2005)

Responsible for environmental permitting for 230 MW combined-cycle facility. Directed environmental impact studies, including air, traffic, noise, water and wastewater, visual impact assessment, hazardous materials storage and use, Massachusetts Contingency Plan (MCP) issues, wetlands, land use and visual quality, historic resources, EMF, and public health. Responsible for developing MEPA compliance documents (Draft and Final Environmental Impact Reports), Application for a Certificate of Compatibility and Public Need, and other state, federal, and local permits and approvals. Outstanding project management team resulted in exceptionally smooth permitting effort. The project offers several unique benefits, including significant benefits to the aquatic habitat and water quality of the Lower Charles River basin through extension of existing once-through cooling system.

MICHAEL K. ANDERSON, QEP

EDUCATION

B.S., Meteorology, Belknap College, 1970

B.A., Chemistry, University of Connecticut, 1969

PROFESSIONAL REGISTRATION/CERTIFICATIONS

Qualified Environmental Professional, 1997

AREAS OF EXPERTISE

Mr. Michael K. Anderson, QEP, has 37 years of experience encompassing:

- Power Generation Air Permitting
- Multi-Media Permitting
- Air Permitting and Compliance Engineering
- Dispersion Modeling
- SIP Development
- Receptor Modeling
- Ambient Monitoring

REPRESENTATIVE EXPERIENCE

Mr. Anderson manages and conducts air permitting projects for new and modified power generation sources that are subject to PSD, NNSR, and other air permitting requirements. He has developed emission estimates, identified strategies to eliminate PSD, NNSR and other permitting requirements, assessed the applicability of New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS), determined Lowest Achievable Emission Rate (LAER) and Best Available Control Technology (BACT) emission limits, negotiated permit conditions, and testified at public hearings and meetings.

CPV Valley, PSD and Part 201 Air Permit Application Supplement, 630 MW Power Plant – Wawayanda, NY (Air Permitting Manager: 2011 – present)

For the purpose of demonstrating compliance with new regulatory requirements, Mr. Anderson managed the preparation of a supplement to the original PSD and Part 201 air permit application for a nominal 630 MW combined-cycle power generating facility in Wawayanda, New York. The supplement included updates to the original BACT/LAER analyses, a new BACT analysis for greenhouse gases, and demonstrations of compliance with 1-hour average National Ambient Air Quality Standards (NAAQS) that were established in 2010 for nitrogen dioxide (NO₂) and sulfur dioxide (SO₂). The NAAQS compliance demonstration included the preparation of a supplemental modeling protocol, a multi-source emission inventory, and comprehensive cumulative dispersion modeling analyses using the PVMRM algorithm in AERMOD to demonstrate compliance with the 1-hour average NO₂ NAAQS. A final draft PSD and Part 201 air permit has been issued for the facility.

Astoria Energy, LLC, PSD Permit Application, 1150 MW Power Plant – Queens, NY (Air Permitting Manager)

Mr. Anderson managed the preparation of the Prevention of Significant Deterioration (PSD), Non-attainment New Source Review (NNSR) and Title V Air Permit Application and corresponding sections of the Article X Application to the Board of Electric Generation Siting and the Environment at the New York State Department of Public Service (NYS DPS) for a 1150 MW combined-cycle dual fuel-fired power plant in Astoria, Queens, New York. The proposed facility was subject to LAER and offsets requirements for NO_x, VOC and CO, and BACT requirements for PM, PM₁₀, SO₂ and H₂SO₄. He determined the stack height needed to meet the requirements of both the New York State Department of Environmental Conservation (NYS DEC) and the Federal Aviation Administration (FAA) for LaGuardia Airport. He prepared reports on environmental justice, air quality impacts modeling based on the future economic dispatch of power in the region, and multi-source modeling to satisfy City of New York requirements. Mr. Anderson also provided testimony at public hearings concerning air quality and visible plumes of condensed water vapor. He obtained full approval of the proposed emission control technologies and dispersion modeling analyses from the NYS DEC and NYS DPS. Operation of the first 575 MW portion of the plant commenced in 2006. Since then, Mr. Anderson has managed the preparation of various applications to modify the construction and operating (Title V) permits, which necessitated updates to the BACT determinations and dispersion modeling analyses. Construction of the remaining portion of the facility has now commenced.

Calpine Stony Brook, PSD Air Permit Application, 79.9 MW Power Plant Modification – Stony Brook, NY (Air Permitting Manager)

Mr. Anderson managed the preparation of the pre-construction air permit application and information needed for corresponding sections of the State Environmental Quality Review (SEQR) Environmental Assessment for Calpine's proposed 79.9 MW second unit, to be co-located with the Nissequoque Cogen Partners facility on the State University of New York (SUNY) campus in Stony Brook, New York. Since the proposed project constituted a major modification to an existing major source, it was subject to both Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NNSR) regulations. Mr. Anderson worked with the client to develop, review and refine the emissions profile, and he managed the preparation of the required determinations of LAER for NO_x and VOC, and BACT for PM, PM₁₀ and PM_{2.5}. He determined the stack height needed to minimize visual impacts and meet the requirements of the NYS DEC. He managed the comprehensive dispersion modeling and environmental justice analyses needed to demonstrate compliance with the applicable standards and criteria. All pre-construction environmental permits and approvals were obtained in a six-month timeframe, but the project was not constructed because the developer and landowner were unable to reach contract agreement.

Kings Park Energy, LLC, Pre-Construction Air Permit Application, 300 MW Power Plant – Kings Park, NY (Air Permitting Manager)

Mr. Anderson managed the preparation of the pre-construction air permit application and corresponding sections of the Article X Application to the Board of Electric Generation Siting and the Environment at the NYS DPS for a 300 MW simple-cycle dual fuel-fired power plant in Kings Park, New York. He assisted in the development of the project design to ensure that it would not be subject to Prevention of Significant Deterioration (PSD) requirements. He determined the stack height needed to minimize visual impacts and meet the requirements of the NYS DEC. He prepared reports on air quality impacts modeling based on the future economic dispatch of power in the region and to address the recently adopted National Ambient Air Quality Standards (NAAQS) for particulate matter with a nominal aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}). Mr. Anderson provided testimony at public hearings concerning air quality and the potential for visible plumes of condensed water vapor. He obtained full approval of the proposed emission control technologies and dispersion modeling analyses from NYS DEC (issuance of draft air permits). The Project development rights were sold to another firm that subsequently withdrew the permit applications.

Hawkeye/NGS/SESI, Environmental Permit Applications, 79.9 MW Power Plant – Medford, NY (Project Manager)

Mr. Anderson managed the preparation of permit applications necessary to obtain the required environmental permits for a proposed 79.9 MW facility. Medford Energy, a partnership of Hawkeye Construction, Northeast Generation Services (NGS) and Select Energy Systems Inc. (SESI) proposed to develop the project in two contiguous phases with Phase I leading to simple-cycle operation by the summer of 2004 and Phase II leading to combined-cycle operation by February 2005. Mr. Anderson assisted in the development of the project design to ensure that it would not be subject to the Prevention of Significant Deterioration (PSD), Non-attainment New Source Review (NNSR) and Article X regulations, and so that the Long Island Power Authority (LIPA) would act as the State Environmental Quality Review (SEQR) Lead Agency and issue a Negative Declaration for the entire project. Mr. Anderson obtained full approval of the proposed emission control technologies and dispersion modeling analyses from NYS DEC (issuance of draft air permits). Project development ended in the absence of an acceptable power sales agreement.

CMEEC, “50 in 5” Air Permitting for 2.5 MW Oil-Fired Engines, Various Sites in Connecticut and New York (Project Manager)

Mr. Anderson directed the preparation of air permit applications to construct and operate twenty 2.5 MW engines located at 10 sites in 5 Connecticut cities or towns plus another site on Fishers Island, New York. To date, sixteen of the engines have been installed and now operate as originally intended, and approved stack emission testing performed by TRC has demonstrated compliance with the emission limits required by the air permits.

Kleen Energy Systems, PSD Air Permit Application, 620 MW Power Plant – Middletown, CT (Air Permitting Manager: 2000 – Present)

Mr. Anderson managed the preparation of the Prevention of Significant Deterioration (PSD) air permit application and corresponding sections of the Connecticut Siting Council application for a 620 MW combined-cycle dual fuel-fired power plant in Middletown, Connecticut. He provided testimony at public hearings concerning air quality and the potential for visible plumes of condensed water vapor. Mr. Anderson managed the preparation of the required determination of LAER for NO_x, BACT for PM, PM₁₀, PM_{2.5}, VOC, and CO, and multi-source dispersion modeling analyses to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and PSD increments. The facility commenced commercial operation in July 2011, and Mr. Anderson continues to manage activities to document compliance with the multi-media environmental permit requirements.

PROFESSIONAL AFFILIATIONS

- American Meteorological Society
- Air and Waste Management Association

SELECTED PRESENTATIONS AND PUBLICATIONS

Anderson, M.K. and Murray, D.R., "Power Plant Siting and Public Relations: Energy Deregulation and Air Quality Benefits," *Paper 70191, AWMA 96th Annual Meeting*, San Diego, California, June 2003.

Anderson, M.K. and Sampieri, S., "Experiences Using ISC-PRIME," *New England Section AWMA Specialty Conference on the Guideline on Air Quality Models: A New Beginning*, Newport, Rhode Island, April 2001.

Anderson, M.K. and Schmidt, K.A., "Performance of the CTDMPPLUS and LAPPES Models in Complex Terrain," *Paper No. 96-WA63.04, AWMA 89th Annual Meeting*, Nashville, Tennessee, June 1996.

Anderson, M.K., Londergan, R.J., Brisini, V.J., and McKenzie, T.E., "Model Performance in Complex Terrain," *Paper No. 93MP2.07, AWMA 86th Annual Meeting*, Denver, Colorado, June 1993.

Anderson, M.K. and Brookman, E.T., "Preliminary Analyses at a PM10 Sampling Site Using a Combined Source Apportionment Approach," *Paper No. 8625.3, APCA 79th Annual Meeting*, Minneapolis, Minnesota, June 1986.

Anderson, M.K. and Carney, M.V., "Overview of Permit Conditions for Resource Recovery Facilities in the Northeast," *New England Section APCA Specialty Conference on the Environmental Implications of Resource Recovery*, Providence, Rhode Island, April 1986.

Anderson, M.K. and Walker, V.R., "Interstate Transport of Particulate Matter: Issues of Data Representativeness, Accuracy and Interpretation," *Paper No. 8234.3, APCA 75th Annual Meeting*, New Orleans, Louisiana, June 1982.

Anderson, M.K. and Wight, G.D., "New Source Review: An Ambient Assessment Technique," *Paper No. 782.4, APCA 71st Annual Meeting*, Houston, Texas, June 1978.

ANTHONY C. AGRESTI, INCE

EDUCATION

B.A., Meteorology, Kean College of New Jersey, 1984

CERTIFICATIONS

Institute of Noise Control Engineering, Full Member
State of New Jersey Noise Control Officer

AREAS OF EXPERTISE

Mr. Agresti has over 27 years of experience encompassing:

- Noise Analyses and Impact Assessments
- Conceptual Noise Control Design
- Design and Implementation of Ambient Noise Monitoring Programs
- Noise Compliance
- Ambient Air Quality/Meteorological Monitoring Program Design, Siting and Management

REPRESENTATIVE EXPERIENCE

Mr. Agresti has a wide range of experience in noise assessments for cogeneration/independent power, compressor station and linear projects, wind power, LNG facilities and industrial clients. He specializes in the design and implementation of ambient noise monitoring programs, performing noise analyses, which include developing detailed noise data for a variety of sources, modeling to calculate facility noise levels and noise impact analyses. Mr. Agresti has also provided expert witness testimony on noise related issues.

Mr. Agresti also provides air quality and meteorological monitoring services to TRC clients. His experience includes the preparation of station operating and quality assurance manuals, and the design, siting and management of monitoring programs. He is also responsible for the quality assurance and reporting of collected data.

Noise Analyses and Impact Assessments

Competitive Power Ventures CPV Valley Energy Center Project – Wawayanda, NY (Technical Manager: 2007-2008)

Mr. Agresti prepared the SEQRA EIS noise assessment for this proposed 630 MW natural gas facility in Wawayanda, New York. The assessment consisted of an ambient noise monitoring program at selected noise residential locations in the vicinity of the project site, and a detailed 3-dimensional noise modeling and mitigation study. The proposed project would utilize air cooling technology, which required special attention during the noise modeling analysis. Mr. Agresti was also responsible to ensure that calculated future noise levels and increases in noise

would be in compliance with the local noise ordinance and the requirements of the NYSDEC.

**Caithness Bellport Energy Center – Brookhaven, NY
(Technical Manager: 2005-2006)**

Mr. Agresti prepared the SEQRA EIS noise assessment for this proposed 346 MW combined cycle combustion turbine project in Brookhaven, New York. The project will consist of a Siemens Westinghouse combustion turbine and a heat recovery steam generator. The project will utilize an air cooled condenser for cooling. Was responsible for all phases of the noise licensing, including ambient noise monitoring, noise modeling of project sources, and determining compliance with both local standards and the New York State Department of Environmental Conservation's Noise Policy. Noise modeling was conducted utilizing the CadnaA noise model. This 3-dimensional model was used to develop a noise contour map of the entire area. The model allows input of topographic features and buildings, and takes into account both reflection and absorption by these features. Mr. Agresti subsequently provided oversight during the noise compliance guarantee testing carried out by Siemens.

**PPLG Peaking Units – Shoreham, NY and Edgewood, NY
(Technical Manager: 2003)**

Mr. Agresti prepared the noise assessments for these two peaking facilities consisting of two LM6000 combustion turbines each in Brookhaven, New York and Brentwood, New York. Under the SEQR filing, allowable noise was governed by the local noise standard and the NYSDEC noise guidelines. The assessments consisted of background noise monitoring to quantify existing noise levels and conducting noise modeling to calculate future facility levels. Mr. Agresti worked closely with engineering staff to specify noise control measures which would be required in order to comply with both local regulations and the NYSDEC noise impact guidelines.

Mr. Agresti subsequently carried out extensive noise testing programs in the area around the constructed Shoreham facility, including testing for start-up and shut down conditions.

**Keyspan Energy Spagnoli Road Energy Facility – Huntington, NY
(Technical Manager: 2002-2005)**

Mr. Agresti prepared the Article X noise assessment for a proposed 250 MW combined cycle facility consisting of a Frame 7F combustion turbine and air cooled condenser. Collected background noise level data in accordance with NYSDPS requirements. Acoustic design goals were developed based on ambient conditions as specified by the modified CNR method and NYSDPS stipulations. Fairly low ambient noise levels and the proximity of residential uses required extensive noise control, especially on the air cooled condenser. Mr. Agresti also provided expert witness testimony at the Article X hearings.

**Keyspan Energy Ravenswood Facility, Queens, New York
(Technical Manager: 2000; 2004)**

Mr. Agresti prepared the Article X noise assessment for this combined cycle facility consisting of a Frame 7FA combustion turbine and air cooled condenser. TRC conducted an ambient noise monitoring program in accordance with NYSDPS requirements. Acoustic design goals for the facility were developed based on ambient conditions as specified by the modified CNR method and NYSDPS stipulations. Mr. Agresti conducted a noise modeling study as part of facility licensing to demonstrate compliance with all applicable noise standards. Mr. Agresti also conducted the compliance noise testing of the project as required by NYSDPS.

SCS Astoria Generating Station – Queens, NY (Technical Manager: 2000)

Mr. Agresti prepared the noise assessment in support of the Article X permitting for this proposed baseload combined cycle facility. The assessment included an ambient noise monitoring program to characterize the existing noise environment. Computer noise modeling of the major facility sources was performed using the NYSDPS's NOISECALC model. The projected facility noise levels and the existing ambient noise levels were incorporated into the modified CNR analysis to determine potential noise impacts. Extensive noise control measures were required in order to meet the CNR analysis requirement and to meet the NYC noise standards, including the zoning resolution, noise code and CEQR requirements. Extensive meetings were held with NYCDEP noise staff during the licensing phase.

**New York Power Authority Poletti Station 7– Queens, NY
(Technical Manager: 1999-2000)**

Mr. Agresti performed the noise assessment in support of the Article X permitting for two additional proposed baseload combined cycle facilities. The assessment included an ambient noise monitoring program to characterize the existing noise environment. Computer noise modeling of the major facility sources was performed using the NYSDPS's NOISECALC model. Noise control measures were incorporated as needed in order to comply with the New York City noise standards (including the CEQR requirement) and the modified CNR analysis. Extensive meetings were held with NYCDEP noise staff during the licensing phase. Mr. Agresti also conducted the noise compliance testing for the facility as required under the Article X stipulations.

Clearview Pinelawn Power – Babylon, New York (Technical Manager: 2004)

Mr. Agresti conducted the noise assessment for this combined cycle facility consisting of a GE LM6000 combustion turbine, HRSG, steam turbine, and ancillary equipment. The assessment included an ambient noise monitoring program to characterize existing conditions in the site vicinity, and a noise modeling/mitigation analysis. The project was required to comply with the noise requirements of the Town of Babylon and the New York State Department of Environmental Conservation's noise policy. The modeling analysis revealed that noise mitigation measures would be needed in order to demonstrate compliance. The selected

mitigation measures included an acoustical enclosure for the gas compressors, and a 42 foot high wall to shield nearby residences.

Keyspan Energy Peaking Units – Glenwood, NY and Port Jefferson, NY (Technical Manager: 2001-2002)

Mr. Agresti prepared the noise assessments for these two proposed peaking facility consisting of two LM6000 combustion turbines each in Glenwood, New York and Port Jefferson, New York. Under the SEQR filing, noise will be governed by the local noise standard and the NYSDEC noise guidelines. The assessments consisted of background noise monitoring to quantify existing noise levels and conducting noise modeling to calculate future facility levels. Worked closely with engineering staff to specify noise control measures which would be required in order to comply with both local regulations and the NYSDEC noise impact guidelines.

PPL Global Kings Park Energy Facility – Smithtown, NY (Technical Manager: 2002-2003)

Mr. Agresti preparing the noise assessment in support of the Article X permitting for a proposed 300 MW peaking facility consisting of six LM6000 combustion turbines. The proximity of residential uses and low existing ambient noise levels required that extensive noise control measures be incorporated into the facility design in order to meet the stringent requirements of the New York State Department of Public Service's modified Composite Noise Rating method. Worked closely with equipment suppliers and project engineers to specify noise control measures, which include an extensively treated turbine building, significant stack silencers, and strategically locating sources on the site.

Kleen Energy Systems, LLC – Kleen Energy, Middletown, Connecticut (Technical Manager: 2001 – Present)

Mr. Agresti conducted the noise assessment for this 620 MW combined cycle facility located in Middletown, Connecticut. A detailed noise modeling study and an ambient noise monitoring program were conducted in order to satisfy the requirements of the State of Connecticut Siting Council. Mr. Agresti provided expert witness testimony to the Siting Council in support of the Project, and has continued to support this project through the design and implementation of construction noise monitoring programs and updating noise modeling to incorporate new or modified sources at the facility to ensure compliance with the noise standard. Mr. Agresti recently completed the noise compliance testing for the facility as part of the Siting Council requirements. The testing demonstrated that facility noise levels were well below the State of Connecticut noise standard limits.

Consolidated Edison Company of New York Gateway Substation, Brooklyn, NY (Technical Manager: 2008)

Mr. Agresti conducted the noise analysis for the Gateway substation environmental assessment. The analysis included calculating offsite noise levels from transformers that would be contained in partially enclosed vaults at the substation. The assessment included evaluating calculated noise levels against ambient

conditions at residential locations in order to determine compliance with the NYC CEQR requirements, and determination of compliance with the New York City noise standards.

Con Ed Development Newington Facility - Newington, Massachusetts (Technical Manager: 2002)

Mr. Agresti performed the noise impact assessment for this proposed electric generating facility. The facility will consist of two GE Frame 7FA turbines, heat recovery steam generators, a cooling tower, and other ancillary equipment. Performed computer noise modeling of the major sources and designed the background noise monitoring program to establish baseline noise levels in the area.

Noise control features were added in order to maintain future increases in noise to no greater than 3 dBA.

SPECIALIZED TRAINING

- Community Noise Control Course, Rutgers University, July 1989 and September 1993

COLIN P. DUNCAN, CPSS, PWS

EDUCATION

M.S., Natural Resources Science, University of Rhode Island, 1991

B.S., Plant and Soil Science, University of Massachusetts - Amherst, 1986

PROFESSIONAL REGISTRATIONS

Certified Professional Soil Scientist (CPSS), (# 3344), 1991

Professional Wetland Scientist (PWS), (# 1412), 2003

Professional Soil Scientist, Society of Soil Scientists of Southern New England, 1990

AREAS OF EXPERTISE

Mr. Colin P. Duncan, CPSS, PWS has program management and technical experience in the following general areas:

- Federal, State and Local Environmental Permitting
- NEPA and State Environmental Policy Act Environmental Impact Studies
- Wetland and Ecological Community Surveys
- Electrical and Gas Utility Siting and Permitting
- Wind, Solar and Fossil Energy Generation Siting and Permitting
- Threatened and Endangered Species Surveys
- Wetland and Watercourse Impact Mitigation Plans
- Construction Environmental Management and Compliance

REPRESENTATIVE EXPERIENCE

CPV Valley, LLC – Valley Energy Center – Wawayanda, NY (Task Manager/Senior Wetland Scientist)

Mr. Duncan prepared federal and state environmental permit applications and terrestrial ecology components of the New York State Environmental Quality Review Act (SEQRA) Draft and Final Environmental Impact Statements for a proposed 680 MW natural gas-fired power plant located in Wawayanda, Orange County, New York. Mr. Duncan evaluated ecological resources and potential impacts to wetlands and habitats associated with the project. The project also includes electrical, natural gas and water/wastewater interconnects to local and regional facilities, and requires access through both federal and New York State jurisdictional wetlands. A comprehensive project impact assessment was conducted through the SEQRA process and concluded in 2012. Mr. Duncan was responsible for assessing general ecological, wetland, and threatened and endangered species impacts. He prepared mitigation and enhancement plans in accordance with project permits. The NYSDEC Freshwater Wetlands Permit, Water Quality Certification, and US Army Corps of Engineers Nationwide Permits were issued in 2012.

P.G. &E. Generating – Athens Generating Project - Athens, NY (Task Manager/Senior Wetland Scientist)

Mr. Duncan directed on-site wetland investigations, boundary delineations, detailed hydric soil investigations, wetland function and value characterization, wetland impact evaluations and mitigation design, and other terrestrial ecology studies such as vegetative cover mapping and wildlife habitat assessment for a proposed 1,080 MW independent power generating project on an undeveloped site in Athens, New York. Wetland delineations were performed in conjunction with both the New York State Environmental Conservation Law for state jurisdictional wetlands and Section 404 of the Clean Water Act for federal jurisdictional wetlands. He also directed and performed wetland delineations and related terrestrial ecology studies along linear interconnects including an approximately two-mile water intake and discharge pipeline extending from the site to the Hudson River. Mr. Duncan prepared the terrestrial ecology section of the application for permit required under Article X of the New York State Public Service Law, and an Application for a Section 10/404 permit to the US Army Corps of Engineers. Mr. Duncan also designed extensive wetland replication, restoration and enhancement areas, including specialized wetlands habitats (e.g., vernal pools) to compensate for both temporary and permanent wetland impacts associated with the project.

American National Power, Inc. – Ramapo Energy Project - Ramapo, NY (Task Manager/Senior Wetland Scientist)

For a proposed 1,100 MW power generating facility in southern New York, Mr. Duncan directed and conducted terrestrial ecology studies, wetland and watercourse delineations, wildlife habitat and rare, threatened and endangered species studies, wetland function and value assessment, wetland impact assessment and mitigation design, wildlife habitat impact assessment and mitigation design, vegetation cover mapping, and overall preparation of the Terrestrial Ecology section of the Article X Application in conjunction with the New York State Public Service Law. Mr. Duncan worked closely with the civil engineering design team to provide input on site design and layout, including stormwater facilities and gas, water supply and wastewater interconnects to minimize impacts to the natural environment. Pursuant to the identification of a New York State-Threatened reptile species on the site and surrounding areas, Mr. Duncan worked closely with the New York State Department of Environmental Conservation (NYSDEC) staff in directing and supervising a team of herpetological experts in performing a habitat study and impact analysis for the species, including radio telemetry (“tracking”) studies, detailed on-site “basking habitat” analysis, habitat mitigation/creation design, and design of other habitat mitigation features such as barrier fencing and gates, and temporary and permanent tunnel passages.

New York State Electric and Gas, Corning Valley Transmission Project - Steuben County, New York, NY (Senior Wetland Scientist/Permitting Specialist)

Mr. Duncan was senior wetland scientist and provided environmental permitting support for New York State Electric and Gas' (NYSEG) Corning Valley Transmission Project (CVTP). The CVTP, constructed in 2010, increased electric power reliability in NYSEG's electrical service territory in Steuben County, New York and consisted of the development of a new 230-115 kV, substation (i.e., the "Stoney Ridge Substation") in the Town of Campbell; the development of a new 115-12.5 kV substation (i.e., the "Sullivan Park Substation") in the Town of Erwin; as well as the development of a new 9.6 mile, 115 kV line from the new Stoney Ridge Substation to the existing West Erie Substation, located in the Town of Erwin. Mr. Duncan has conducted field wetland delineation reviews along the proposed ROW and substation sites, prepared wetland permit documents for the US Army Corps of Engineers and NYSDEC Joint Application for Permit, and coordinated agency jurisdictional reviews. Mr. Duncan also coordinated wetland impact assessment, wetland mitigation design and obtaining regulatory approvals for a pilot off-site compensatory wetland mitigation program with the non-profit group Upper Susquehanna Coalition, which is currently constructing the required compensatory wetlands for the project.

Rochester Gas and Electric, Wetland Delineation and Permitting for Multiple New and Existing Circuit and Substation Construction, Rochester, NY (Lead Wetland Scientist)

Mr. Duncan conducted wetland delineations along approximately 30 miles of existing and proposed "West Side" electrical facilities including new Circuit 927 (with multiple existing circuit and substation upgrades), and "East Side" electrical facilities including new Circuit 929 (with multiple existing circuit and substation upgrades), within two counties and eight communities in the Rochester, New York area. In addition to the delineation efforts, Mr. Duncan performed Global Positioning System (GPS) surveys along the transmission right-of-ways and prepared project mapping. He also prepared US Army Corps of Engineers Jurisdiction Determination (JD) Reports and Section 404/10 filings which resulted in nationwide permits (NWPs) for the transmission work. He also supported preparation of an Article VII filing to obtain a Certificate of Environmental Compatibility and Public Need ("Certificate") through the NYS Public Service Commission, and conducted pre-construction surveys as part of the implementation of the Environmental Management and Construction Plan ("EM&CP"). As part of the project permit conditions, Mr. Duncan conducted pre- and post-construction invasive species surveys to document the presence of purple loosestrife (*Lythrum salicaria*) in project area wetlands and to make recommendations regarding the use of biological controls under NYSDEC's invasive species control program.

PROFESSIONAL AFFILIATIONS

- American Registry of Certified Professionals in Agronomy, Crops and Soils
- Association of Massachusetts Wetland Scientists
- Society of Soil Scientists of Southern New England (Membership Committee; 1994 Riparian Buffer Zone Conference Co-Chairman)
- Society of Wetland Scientists

SPECIALIZED TRAINING

- 40-hour OSHA Hazardous Materials Health and Safety Training

DAVID E. SCHAFER, PE

EDUCATION

M.S., Environmental Engineering, Northeastern University, 1980

B.S., Civil Engineering, SUNY College of Environmental Science and Forestry, 1978

PROFESSIONAL REGISTRATIONS

Professional Engineer, Maine No. 5254

AREAS OF EXPERTISE

Mr. Schafer has over 30 years of experience encompassing:

- NPDES/SPDES Permitting
- Application of Analytical and Numerical Modeling Techniques
- Water Resources Engineering
- Erosion and Sediment Control
- Ground Water Development and Management
- Contaminant Transport Simulation
- Stormwater Management/Permitting
- Subsurface Investigation Programs
- Receiving Water Modeling

REPRESENTATIVE EXPERIENCE

Mr. Schafer has over 30 years of professional experience as a water resources engineer. He has coordinated numerous National Pollutant Discharge Elimination System (NPDES) permitting programs for facilities throughout the Northeast, Mid-Atlantic and Southeastern US. In addition, he has coordinated water supply, hazardous waste management and stormwater management programs for a variety of clients encompassing a wide range of industrial operations. This includes procurement of water allocation permits, consumptive water use permits, construction dewatering permits, flood hazard area permits, preparation of Construction and Industrial Stormwater Pollution Prevention Plans (SWPPPs), securing state and Federal wetlands permits, obtaining Coastal Zone Consistency determinations and preparation of Spill Prevention Control and Countermeasure Plans (SPCCs). He has developed strong working relationships with regulators at the state, regional and federal levels. In addition, he has provided expert witness testimony at adjudicatory hearings in New York State and before the Massachusetts Energy Facility Siting Board and the New Hampshire Energy Facility Site Evaluation Committee.

Water Resources Permitting, CPV Valley Energy Center, Orange County, NY

Provided strategic guidance and technical oversight in support of SEQRA, wastewater discharge and SPDES permit filings for a proposed 630 MW combined cycle generating station in Orange County, NY. Given the tight

regional water supply availability, the project will use treated effluent from the Middletown POTW to satisfy process makeup water requirements. Waste heat will be rejected using an air-cooled condenser.

Groundwater Discharge Permitting, SEQRA, Caithness Long Island Energy Center, Brookhaven, NY

Coordinated water resource impact assessments in support of the facility's SEQRA application and developed the SPDES permit application for operational stormwater management for a proposed 346 MW combined cycle peaking facility in the Town of Brookhaven, NY. A SPDES permit for discharge to groundwater was issued by the NYSDEC.

Water Allocation and Consumptive Water Use Permitting, AES Westover, LLC, AES Westover Multi-Pollutant Control Project, Town of Union, NY

Provided QA/QC review of the environmental notification forms and coordinated water allocation and consumptive water use permitting for the installation of air pollution control equipment at the AES Westover coal fired power plant in the Town of Union, NY.

NYS Article X, Wawayanda Energy Center, Wawayanda, NY

Provided strategic guidance and technical oversight in support of Article X filings for a 540 MW combined cycle generating station in Orange County, NY. The proposed Facility will use treated effluent from the Middletown POTW to satisfy process makeup water requirements. The Project has received approval from the NYS Public Service Commission under the Article X process.

SPDES Permitting, NYS Article X, Ravenswood Expansion Project, KeySpan, New York City, NY

Coordinated technical review for SPDES permitting and Article X submittals for a proposed 250 MW combined cycle expansion project at the Ravenswood Generating Station located in Queens, NY. The facility received a positive decision from the NYS Public Service Commission under New York's Article X process.

Groundwater Discharge Permitting, NYS Article X, Brookhaven Energy Project, Brookhaven, NY

Coordinated groundwater impact assessments in support of the facility's Article X application and developed the SPDES permit application for operational stormwater management (discharge to ground water) for a proposed 500 MW combined cycle generating station in Brookhaven, NY. The facility has received approval from the NYS Public Service Commission under the Article X process and a SPDES permit has been issued for the facility from the NYSDEC.

SPDES Permitting, NYS Article X, Combined Cycle Project, New York City, NY

Coordinated CORMIX modeling studies and provided technical oversight for the Article X and SPDES permit applications for a 500 MW combined cycle generating station in Astoria, NY. The facility was granted approval by the NYS Public Service Commission and a SPDES permit was issued by the NYSDEC.

SPDES Permitting, NYS Article X, 300 MW Peaking Facility, PPL Global, Smithtown, NY

Coordinated water resource impact assessments in support of the Facility's Article X application and developed the SPDES permit application for operational stormwater management for a proposed 300 MW simple cycle peaking facility in Smithtown, NY. The Article X Application was approved by the NYS Public Service Commission and a SPDES permit was issued by the NYSDEC.

SPECIALIZED TRAINING

- OSHA Hazardous Waste Site Training, 40 hours, 1984.

SELECTED PUBLICATIONS

Schafer, D .E., Woodruff, R. J., Hughto, and G .K. Young, "Calibration of hydrology and sediment transport on small agricultural watersheds using HSPF," Proceedings of the *Stormwater and Water Quality Management Modeling and SWMM Users Group Spring Meeting*, Alexandria, VA, March 1982.

Schafer, D. E., J. C. O'Shaughnessy, and F. C. Blank, "Analysis of steady state substrate removal models for the RBC," Presented at the *First International Conference on Fixed-Film Biological Processes*, Kings Island, OH, April 1982.

Woodruff, D.A., D.E., Schafer, R. J. Hughto, and G. K. Young, "Continuous simulation of agricultural runoff quantity and quality using the HSPF model," Proceedings of the *ASCE 1982 Irrigation and Drainage Division Specialty Conference on Environmentally Sound Water and Soil Management*, Orlando, FL, July 1982.

Hughto, R.J., D.C. Noonan, D.E. Schafer, "Analysis of urban runoff impacts on an urban recreational lake: Results of a NURP case study," Presented at *American Water Resources Association 19th Annual Conference and Symposium on Regional and State Water Resources Planning*, San Antonio, TX, October 1983.

Bras, R. L., D. Grossman, D. E. Schafer, "The effects of hydrometeorology on the GOES random data collection system," *Hydrological Sciences Journal*, 30(1), March 1985.

Schafer, D. E., R. P. Schreiber, B. M. Harley, D. R. Dunn, "A microcomputer-based training simulator for wastewater treatment plant operators," *Fourth*

Conference on Computing in Civil Engineering, Boston, MA, October 1986.

Donovan, J.F., D. E. Schafer, "Ground water studies aid resources management in Falmouth, Massachusetts," *Journal of the New England Water Pollution Control Association*, 21(1), May 1987.

Schafer, D. E., "Preparation of Industrial Stormwater Pollution Prevention Plans," *ENSR Breakfast Seminar Series*, Waltham, MA, January 1993.

JUDITH A. BARTOS

EDUCATION

M.S., Soil Science, University of Massachusetts at Amherst, September 1994

Thesis title: Heavy Metal Distribution in Massachusetts Soils

B.S., Plant and Soil Sciences, University of Massachusetts at Amherst, 1989

AREAS OF EXPERTISE

Ms. Bartos has 16 years of cumulative experience in the following:

- GIS 10.1 ArcInfo/Spatial Analyst/3D Analyst; ArcServer/sde Geodatabase; 3DS Max 2013; ENVI 4.7 Remote Sensing Analysis Software; Visual Nature Studio 3; AutoCad 2007; Flex API
- Three-Dimensional Modeling, Photosimulation, 3D Terrain Visualization, Viewshed Analysis, Line-of-Sights, Advanced Terrain Analysis, Linear Referencing, Shadow Study, Animated Fly-Through, Cut and Fill, Air Modeling and Groundwater Modeling Isopleths, Advanced Geodatabases
- Expert Testimony for Visual Impact Assessments and Photosimulations

REPRESENTATIVE EXPERIENCE

CPV Valley Energy Center – Wawayanda, NY (Sr. GIS Systems Analyst: 2008-2009)

Ms. Bartos performed analyses and produced a Visual Impact Assessment Report for submittal, according to the New York State Department of Environmental Conservation “Assessing and Mitigating Visual Impacts” guidance policy for a proposed 500 MW combined cycle facility. These analyses included a viewshed analysis of a 5-mile study area and an extensive suite of photosimulations of the proposed project during daytime and nighttime lighting conditions, including panoramic views. Ms. Bartos also provided a nighttime video simulation of the facility animated in 3DS Max 9 visualization software primarily focused and based on an FAA Type L-864 Flashing Red Obstruction Beacon, with a flashing frequency occurring once every three seconds (1.5 seconds on, 1.5 seconds off) for a total of 20 flashes per minute.

Moses-Willis Double Circuit Contingency Project – Massena, NY (Sr. GIS Systems Analyst: 2012)

Photosimulations for 18 locations in addition to Lines of Site Analyses and accompanying documentation were produced for the New York Power Authority (NYPA) under an agreement between NYPA, NY SHPO, and the NY DPS. The purpose of the task was to document the visual impacts of proposed structures to lands within the Robert Moses State Park. The state park has been determined eligible for listing in the National Register of Historic Places.

Astoria Energy Phase II Project – Astoria, NY (Sr. GIS Systems Analyst: 2009)

This project involved a transmission line upgrade to accommodate the existing 1,000 MW Astoria combined-cycle generating facility. The transmission line upgrade included larger structures and a 345 kV circuit. New photosimulations along several vantage points of the interconnect were produced to assess the visual impact of the upgrade.

Niagara Mohawk Transmission Line Expansions – NY (Sr. GIS Systems Analyst: 2006)

Ms. Bartos provided extensive GIS services in Erie and Albany Counties, New York regarding the expansion and rebuild of existing transmission line. Ms. Bartos provided GIS support, viewshed analyses, and a suite of photosimulations representing potential visibility of proposed structures in select areas, in preparation for Article VII documents and filing.

Mattiace – Glen Cove, NY (Sr. GIS Systems Analyst: 2006)

As part of TRC's Exit Strategy impetus, TRC has taken full statutory responsibility for environmental remediation of the former Mattiace Petrochemical site and is providing on-going operations, maintenance and monitoring. Cleanup has involved groundwater treatment and soil vapor extraction. As a part of EPA's requirement, Ms. Bartos has provided GIS analyses and graphical representation of groundwater and soil vapor concentration isopleths using database tables generated from the quarterly monitoring.

TransGas Energy Systems – Brooklyn, NY (Sr. GIS Systems Analyst: 2003)

Ms. Bartos provided GIS support services for the proposed TransGas Energy Systems combined cycle 1100 MW electric generating facility. Ms. Bartos provided GIS analyses focused on the compatibility of the project with local laws, existing land uses, existing socioeconomic data, zoning districts, and land use planning within the Greenpoint, Brooklyn urban coastal zone and waterfront areas. GIS was also used to address Environmental Justice issues using TRC's Air Group, modeling air stack constituents of concern in relation to demographically sensitive areas within neighborhood districts and by providing a visual depiction of Environmental Justice locations utilizing EPA and New York Department of Environmental Conservation standards. Additionally, Ms. Bartos performed a Predictive Shadow Study as outlined in the City Environmental Quality Review (CEQR) Technical Manual. Using the results of the CEQR screening analysis, three dimensional predictive modeling software was used to render the proposed facility. The computer generated 3D image was then transposed into different landscapes using spatial data. Subsequently, shadow lengths and angles at different times of day and year were predicted as required in the CEQR Manual. The resulting visual data were used to evaluate possible shadow impacts on city parks, historic areas, and aquatic species in the adjacent watercourse.

Freeport Electric Plant No. 2 – NY (GIS Systems Analyst: 2001)

Ms. Bartos prepared surface modeling and isopleth contouring associated with air quality modeling to document Environmental Justice (EJ) issues. EJ considers disproportionate adverse human health and environmental impacts on minority and low-income populations. Demonstrated that modeled air quality impacts from the proposed facility will not exceed EPA Significant Impact Levels and will not cause an NAAQS to be exceeded or violated. The initial screening area was selected by choosing census tracts that fall within or overlap a one-mile radius study area surrounding the generating facility sites. Total minority population and poverty rate were the main indicators used to determine the presence of a Community of Concern in the screening area.

Rochester Gas & Electric, Monroe and Wayne Counties – NY (Sr. GIS Systems Analyst: 2003)

Ms. Bartos produced approximately 50 maps consisting of environmental constraints data and surveyed habitats mapping to support the efforts of an Article VII filing associated with the construction of new and rebuilding of existing overhead 115 kV transmission line in addition to reconstruction and upgrades to several substations.

Kings Park Energy, PPL; Wawayanda Energy Center, Calpine Corporation – NY (GIS Systems Analyst: 2001)

Ms. Bartos provided GIS services to support the permitting of these two proposed (600 MW and 540 MW, respectively) power generating facilities under Article X of the New York State Public Service Law. The Article X process included presenting cartographic information relative to environmental setting, potential environmental impacts and feasibility of facility operation, representation of reasonable alternatives and proposed mitigation.

Nixon Peabody LLP

Nixon Peabody LLP is a full-service law firm that helps clients navigate complex challenges in energy, litigation, real estate, corporate law, and finance. It has approximately 650 attorneys in offices throughout the U.S., include five in New York State—Albany, Buffalo, Long Island, New York City, and Rochester. The firm's attorneys are recognized leaders whom clients count on to solve a broad range of complex challenges.

Nixon Peabody has served the needs of energy clients for more than 75 years. The firm's Energy Practice has significant experience in all aspects of the energy business ranging from project finance, equity investment, tax credits and grants, M&A, and energy regulatory work, to construction related matters such as power purchase agreements, engineering, procurement and construction contracts, and equipment leasing, and to project development matters such as project siting, permitting, environmental review and all other issues related to the development of traditional and alternative energy facilities. The firm's attorneys have a broad range of experience in capital market transactions, as well as in handling transactions involving debt from more traditional project finance lenders. It represents project developers, sponsors and equity and tax equity investors, lenders, electric and gas utilities, public power agencies, municipal utilities and other energy enterprises. In addition, when called upon for specialized services, the Energy Practice is supported by additional teams of talented lawyers available to satisfy the needs of their clients in such areas as intellectual property, creditor's rights and workouts, and litigation and arbitration.

Nixon Peabody has represented clients in all facets of fossil fuel power generation, transmission, and distribution for more than 50 years. It has represented utilities, independent power producers, developers, and other players in the development of scores of generating stations. These facilities have ranged in size from relatively small (under 80 MW) cogeneration facilities to very large (over 1600 MW) generating stations.

Nixon Peabody represents, or has represented, numerous leaders in the energy industry such as:

- Calpine Corporation
- Competitive Power Ventures
- Horizon Wind Energy
- Pattern Energy
- Iberdrola Renewables
- Acciona Energy
- First Wind
- Ridgeline Energy
- PSEG Power
- PPL Corporation
- NRG Energy
- GenOn Energy
- Trans Canada
- Harbert Power
- Citibank
- Wind Capital Group
- U.S. Power Generating
- NextEra Energy
- First Reserve Corporation
- Noble Environmental Power
- Constellation Energy
- Alliant Energy
- Invenergy LLC
- BNP Paribas
- Morgan Stanley
- JP Morgan
- U.S. Bank
- Olympus Power
- Covanta Energy Group
- E. ON Climate & Renewables NA

Nixon Peabody is one of the leading energy firms in New York. In addition to its work on the Valley Project, it has represented the sponsors and developers of many of the other major generation and transmission projects proposed in New York over the last two decades, including:

- The Athens Generating Facility
- The Bethlehem Energy Center
- Kings Park Energy
- Empire Generating
- Astoria Generating Station
- Cohocton Wind Energy Project
- Dutch Hill Wind Energy Project
- Jericho Rise Wind Energy Project
- Arkwright Summit Wind Energy Project
- Dairy Hills Wind Energy Project
- St. Lawrence Wind Energy Project
- Shoreham Generating Facility
- Edgewood Generating Facility
- Pinelawn Power Project
- Cross Sound Cable Project
- Cross Hudson Cable Project
- Harbor Cable Project

Nixon Peabody also has represented proposers (including a number of the proposers ultimately selected for contracts) in almost all of the significant power supply and transmission RFP processes conducted by government and investor-owned utilities in New York over the last decade. The firm's roles in these RFP processes have included overall proposal review and coordination; preparation of permitting, siting, and public outreach plans; preparation of comments on, and exceptions to, and negotiation of, proposed power purchase and transmission rights agreements; preparation of responses to requests for clarifications and additional information; and participation in proposal interviews. RFP processes in which Nixon Peabody has represented proposers include:

- Long Island Power Authority Offshore Wind Energy RFP
- Three Long Island Power Authority RFPs for Long-term Power Supply
- New York Power Authority Great Lakes Offshore Wind Energy RFP
- Two New York Power Authority RFPs for Long-term Power Supply
- Several rounds of the New York State Energy Research and Development Authority's Main Tier Renewable Portfolio Standard Solicitations
- Consolidated Edison 2002 Long-term Power Supply RFP



Richard M. Cogen

Partner

437 Madison Avenue • New York, NY 0022
Phone: 212-493-6639 • Fax: 866-947-1278
E-mail: rcogen@nixonpeabody.com
Website: www.nixonpeabody.com

Practice

Energy and Environment
Public Finance

Experience

Richard Cogen has worked extensively on the development, procurement, financing, contractual, environmental regulatory, and permitting aspects of developing and constructing major energy and solid waste facilities. Representative projects include , gas , oil , tire , wind- and coal-fired power generation facilities, wind energy facilities, solar energy facilities, large mass burn waste-to-energy facilities, solid waste and ash landfills, recycling and composting facilities, and large-scale municipal waste collection and disposal contracts.

Mr. Cogen is recognized for exceptional standing in the legal community in *Chambers USA: America's Leading Lawyers for Business 2012* for Energy work.

Mr. Cogen's project experience includes the following:

- **PSEG Power**

Mr. Cogen was the lead outside attorney for the environmental due diligence and environmental risk allocation contract negotiations with respect to the company's acquisition of the Albany Steam Station. He also represented PSEG Power in the repowering of the Albany Steam Station and in licensing a 600 MW submarine electric generator lead between New Jersey and New York.

- **PG&E National Energy Group/National Energy & Gas Transmission**

He was one of the lead attorneys for the licensing and environmental impact review of the Athens Generating Project, a 1,100 mw gas-fired combined cycle power generation facility proposed to be located in Athens, New York. This project is the first project to be licensed under New York's new power plant siting statute. Mr. Cogen also assisted the company in the permitting of the Madison, NY Wind Project.

- **PPL Global, Inc.**

He was lead counsel for the siting and permitting of a 300 MW gas-fired simple cycle generation facility proposed to be located in Kings Park, New York, and assisted the company in the permitting and development of several 79 MW gas turbine generating projects in Long Island, New York.

- **Babcock & Brown.**

He was the lead counsel assisting Sterling Energy Associates, LLC, a subsidiary of Babcock & Brown, in the development of a combined-cycle generating facility in Long Island, New York. He also was the lead attorney for the acquisition of the Cross-Sound Cable and the related financing.

- **TransÉnergie U.S., Ltd.**
He was lead attorney for the licensing in New York of the Cross Sound Cable project, a 345 KV transmission line under Long Island Sound between Connecticut and New York.
- **First Wind**
Mr. Cogen represented First Wind in the development of three large scale wind energy facilities in New York.
- **Acciona Energy North America**
Mr. Cogen represented Acciona in the development of two wind energy projects in New York, and in its negotiations with the New York State Attorney General's office with respect to the wind energy Code of Conduct.
- **EDP Renewables/Horizon Wind Energy**
Mr. Cogen was the lead attorney representing EDP Renewables in the development of three wind energy facilities in New York.
- **Babcock & Brown**
Mr. Cogen was the lead counsel for the acquisition of the Cross-Sound Cable and the related financing.
- **EMI/Long Island Wind Associates**
Mr. Cogen assisted the company in evaluating and preparing a proposal in response to the Long Island Power Authority's Request for Proposal for energy and capacity from an offshore wind energy project.
- **Great Winds LLC**
Mr. Cogen assisted Great Winds LLC in its proposal in response to the NYPA Great Lakes Offshore Wind Energy RFP.
- **Harbor Cable LLC**
Mr. Cogen represented Harbor Cable in its proposal in response to NYPA's in-City capacity RFP.
- **Private Equity Fund**
Mr. Cogen was the lead attorney for the due diligence review of a controlling equity investment in a wind energy development company with a pipeline of approximately 45 projects in more than a dozen states.
- **Major Investment Bank**
Mr. Cogen was one of the lead attorneys with respect to this client's purchase of the tax credit equity in two significant wind project portfolios involving projects in seven states.
- **Sustainable Energy Capital Partners**
Mr. Cogen is the lead attorney for development and financing of solar energy projects totaling up to 100 MW in California.
- **Ciro Technology**
Mr. Cogen is representing Ciro in the development and financing of a 70 MW solar energy project in Puerto Rico.
- **Fishermen's Energy**
Mr. Cogen is representing Fishermen's Energy in the development of its wind energy projects offshore of New Jersey.
- **Confidential Client**
Mr. Cogen assisted this client in preparing a proposal in response to the New York Power Authority's Great Lakes Offshore Wind RFP.
- **Puerto Rico Electric Power Authority**
Mr. Cogen is the lead outside attorney representing the Authority with respect to Clean Water Act § 316(a) and (b) matters for its four power generating facilities.
- **Sunlaw Energy Corporation**
He represented this company in obtaining air permits necessary to construct four cogeneration facilities located in California and the Virgin Islands, including representation of the company in a

lengthy adjudicatory hearing over control technology issues before the South Coast Air Quality Management District.

- **Ogden Energy, Inc./Covanta**

Mr. Cogen was the project leader for the permitting (solid waste and air permits) of a 990 TPD municipal solid waste incinerator to serve the residents of Onondaga County, New York. The project team successfully negotiated the terms of the permit for this facility, and avoided a lengthy adjudicatory hearing as a result. Mr. Cogen has also represented this company on air permitting and enforcement matters with respect to several of its facilities around the United States, and was the lead outside attorney negotiating amendments to the company's long-term service agreements to address air pollution control retrofits required by the Clean Air Act Amendments of 1990.

- **Town of Babylon, New York**

Mr. Cogen assisted the town in creating commercial waste disposal improvement areas to secure commercial waste for its disposal system and in procuring the collection contracts for that improvement area. In addition, he was the lead attorney for the permitting of, and environmental impact statement for, a 750 TPD solid waste-to-energy facility and related landfill.

- **Town of Brookhaven, New York**

As special counsel, Mr. Cogen provided legal counsel to the Town of Brookhaven on virtually every aspect of the town's solid waste management system for ten years. Specific projects include procurement and negotiation of long-term agreements for hauling, composting and recycling services; representation of the town in a nuisance, personal injury and property damage action brought by neighbors of the town's landfill; negotiating a landmark inter-municipal agreement with the Town of Hempstead for the exchange of "trash" for "ash"; permitting and approval of expansions of the town's landfill; permitting of a recycling facility; and preparation of environmental impact statements associated with the various components of the town's solid waste system and the town's Solid Waste Management Plan.

- **City of Albany, New York**

Mr. Cogen was the project leader for the procurement of a long term agreement for MRF services by the city, as agent for a consortium of 15 municipalities, and for the preparation of the consortium's Solid Waste Management Plan. He also was the lead attorney for the procurement and negotiation of a novel long term service agreement under which a private developer was to convert the city's solid waste shredding facility into a transfer station and recycling facility, provide services to the city and the other municipalities in the consortium, and accept waste from private, commercial sources. He was also the project leader for the permitting of, and environmental impact statement for, a new landfill for the city in the environmentally sensitive Albany pine barrens, including a lengthy adjudicatory hearing and follow-up litigation. Mr. Cogen also has been involved in the development of strategy for the permitting of an expansion to that landfill, siting of a new long-term landfill, and litigation with the prospective host town for the long-term landfill.

Admissions

New York State

United States District Court, Western and Northern Districts of New York

United States Court of Appeals, District of Columbia Circuit

Education

Cornell Law School, J.D. (1979)

University of Rochester, B.A., *cum laude* (1976)

Affiliations

Alliance for Clean Energy New York – Counsel to the Board of Directors

American Wind Energy Association – Represents the firm as a member of the Legislative, Transmission and Siting Committees

New York State Bar Association (member, Environmental and Municipal Law Sections, Administrative Law Committee; past member of Executive Committee of Environmental Law Section)
American Bar Association (member, Section on Natural Resources, Energy and Environmental Law)
Institute for Environmental Auditing (past member of Board of Directors)
New York Association for Solid Waste Management
Air & Waste Management Association (past vice-chair, Environmental Auditing Committee; past chair, Legal Committee)



Ruth E. Leistensnider

Partner

677 Broadway, 10th Floor • Albany, NY 12207

Phone: 518-427-2655

E-mail: rleistensnider@nixonpeabody.com

Website: www.nixonpeabody.com

Practice

Energy and Environmental
Public Finance
Litigation

Experience

Miss Leistensnider represents clients in various aspects of energy and environmental law, including the siting and permitting of renewable energy facilities and traditional fossil fuel energy facilities, as well as regulatory proceedings before the State Public Service Commission relating to energy policies, permitting, financing and transfers. In addition, Miss Leistensnider represents clients in the siting and permitting of solid waste management facilities (resource recovery facilities and landfills), commercial and industrial real estate development, water and wastewater facility permitting, wetlands permitting and enforcement, permitting new and modified air emissions sources, Federal Superfund matters, Endangered Species Act matters, and in State and Federal civil and criminal enforcement. Miss Leistensnider also counsels municipalities and project sponsors regarding compliance with the National Environmental Policy Act ("NEPA") and the New York State Environmental Quality Review Act ("SEQR"), developing public participation plans, and obtaining land use approvals in conjunction with the siting and permitting of new facilities, including representation of those clients in any subsequent litigation.

Miss Leistensnider has successfully represented the developers of many complex energy projects.

Representative projects include: obtaining all permits and energy regulatory approvals for two new 79.9 MW power plants on Long Island in 2001, and another 79.9 MW power plant on Long Island in 2004; obtaining all permits and energy regulatory approvals for two wind projects in Steuben County in 2007, a 45 MW plant and a 90 MW plant, and has represented several client in obtaining permits and approvals for other wind projects and their associated transmission lines, including the preparation of the Article VII application for the Hounsfield Wind project. Miss Leistensnider also successfully defended the Article X certificate issued for the Athens Generating Project, an 1100 MW gas-fired merchant power plant in the Hudson Valley, and was involved in the litigation challenging the wetlands permit issued for that facility in federal court, claiming that the Army Corps of Engineers violated NEPA and the National Historic Preservation Act in issuing the permit. The wetlands permit in that case was upheld by the Court. Miss Leistensnider is currently representing Competitive Power Ventures in obtaining a Certificate of Public Convenience and Necessity from the Public Service Commission under Section 68 of the Public Service Law, and J-Power USA in the

siting, permitting and certification of the Tesla Generating Facility on Long Island. Miss Leistensnider regularly represents numerous energy companies in obtaining financing and other regulatory approvals from the Public Service Commission, most recently obtaining approval from the Public Service Commission for the merger of NRG Energy, Inc. and GenOn Energy, Inc.

Miss Leistensnider has also represented developers of solid waste management projects, including the developer of a 990 ton-per-day waste to energy facility in Onondaga County, the last waste to energy facility to receive a permit in New York State. In addition, Miss Leistensnider represents the City of Albany with respect to its landfill located within the Albany Pine Bush Preserve, and has obtained three expansions of that facility within the last two decades, despite its location within the Preserve.

Miss Leistensnider has represented and litigated matters on behalf of a diverse group of municipalities and companies. Miss Leistensnider has represented and litigated matters on behalf of PG&E National Energy Group, PPL Global, LLC, Harbert Power, LLC, NRG Energy, Inc., First Wind Energy, LLC, the City of Albany, Republic Services, County of Franklin Solid Waste Management Authority, the Tioga County Industrial Development Agency, and the Livingston County Industrial Development Agency. Miss Leistensnider has written and spoken on a wide variety of energy and environmental topics, including renewable energy facility permitting, New York's Uniform Procedures Act, SEQR, Article 10 siting, wetlands, brownfields redevelopment, solid waste facility permitting, and Title V issues.

Education

Albany Law School of Union University, J.D., *summa cum laude* 1988
Mount Holyoke College, B.A., 1983

Admissions

Admitted to practice in New York and before the United States District Courts for the Western and Northern Districts of New York, and the U.S. Court of Appeals for the Second Circuit.

Affiliations

New York State Bar Association (Chair 1997-2001, Law Office Economics and Management Committee; Member, Task Force on Electronic Communications, 1994-2004; Member, Environmental Law Section, 1988-present; Delegate, Third Judicial District, House of Delegates, 2001-2003; member, Public Utility Law Committee, 2008 to present); Albany County Bar Association (Co-chair, Environmental Law Committee); Capital District Women's Bar Association; Albany County Bar Association; American Bar Association (Member, Section of Natural Resources, Energy and Environmental Law; Member, Section of Public Utility, Communications and Transportation Law) Air & Waste Management Association (member, Eastern New York Chapter, Mid-Atlantic States Section); Member, New York Association for Solid Waste Management; Member, Board of Advisors, Government Law Center of Albany Law School; Albany Law School National Alumni Association (Treasurer, 2000 – 2002; Secretary, 2002-2004; Vice President 2004 to 2006; First Vice President, 2006-2007; President, 2007-2008; Member, Executive Committee, 2000 – 2009; Chair, Admissions Committee, 1998 – 2003); Member, Capital Leadership Alumni Association, Albany-Colonie Regional Chamber of Commerce; Member, New York Economic Development Council; Member, New York State Business Council; Member, Alliance for Clean Energy New York; Member, Independent Power Producers of New York.; Board of Directors, New York Solar Energy Industries Association, 2010 to present.

Awards and Achievements

Capital District Business Review "40-Under-40", 2001, recognizing professional success and community involvement; Albany Law School's Donald D. DeAngelis Distinguished Alumni in Service Award, 2008, for her outstanding dedication and commitment to alumni, the alumni association and the law school.



Ellen S. Friedman

Partner

437 Madison Avenue • New York, NY 10022

Phone: 212-940-3053 • Fax: 866-451-0519

Email: efriedman@nixonpeabody.com

Website: www.nixonpeabody.com

Practice Areas

Energy

Project Finance

Renewable Energy

Mergers & Acquisitions

Experience

Ellen Friedman has been active in the areas of financing, monetization, acquisition and development of international and domestic infrastructure projects for over 20 years. She has counseled a wide variety of clients, including equity investors, hedge providers, developers, commercial lenders, underwriters, acquirers and sellers with respect to deal structure, partnership and joint venture matters, hedging, intercreditor arrangements, risk assessment, security arrangements and due diligence. Ellen has significant experience in developing, analyzing and negotiating complex credit documentation, joint venture/partnership arrangements, disclosure materials and project agreements including documentation relating to construction, offtake, fuel procurement and transportation.

In the renewable power sector, Ellen has worked with developers of solar, wind and biomass projects. In addition, she has been involved with the financing of gas, coal and hydroelectric power projects, airports, offshore drilling platforms and pipelines.

Ellen was shortlisted for Chambers USA Women in Law Awards 2012, which honors the outstanding female stars of the U.S. legal community, in the area of Energy/Projects Lawyer of the Year. She has been recognized for exceptional standing in the legal community in *Chambers USA: America's Leading Lawyers for Business 2011* for Projects, Nationwide. She has been recognized by Chambers USA in previous years. In 2012, Ellen was also recognized by the *Guide to the World's Leading Project Finance Lawyers* and the *Guide to the World's Leading Women in Business Law*, and in 2013 the *Guide to the World's Leading Energy Lawyers*. In 2007, she was honored by *Project Finance Magazine* with the North American Public Power Deal of the Year and by the *Power Finance and Risk Magazine* in 2005 with the Power Project Finance Best Americas Deal of the Year. In addition, Ellen, was recognized in 2011 as a "Super Lawyer" by the New York Metro Super Lawyer.

Representative Matters

Domestic Energy and Infrastructure Projects

Recent matters include the representation of:

- A wind developer in connection with 258 MW Texas wind farm.
- A large institution in connection with its review and analysis of various solar and wind energy opportunities.
- The sponsor and borrower in connection with a \$150 million letter of credit facility secured by cash flows from a portfolio of domestic energy projects.

- A large international commercial bank in connection with \$17 million refinancing/restructuring of a hydroelectric project in Pennsylvania.
- A large international commercial bank in connection with the \$1.25 billion construction and term financing of the Mystic and Fore River facilities in Boston.
- The sponsor and borrower in connection with construction and term financing of a 622 MW combined cycle power generation facility in Weld County, Colorado.
- The sponsor and borrower in connection with the portfolio refinancing of Rocky Mountain Energy Center and Riverside Energy Center, a 617 MW power generation facility in Beloit, Wisconsin.
- The sponsor and borrower in connection with project development and the \$503 million joint construction and term financing of the 375 MW gas fired facility in Mankato, Minnesota and 250 MW combined cycle facility in Freeport, Texas. Project was awarded the "2005 Power Project Finance Best Americas Deal of the Year" by Power Finance and Risk Magazine.
- A large financial institution in connection with \$28 million financing of and equity participation in the development and construction of automated bagging and ship loading facility in Texas port.
- A major financial institution as underwriter and debt service reserve letter of credit provider in connection with a \$266 million multi-tranche Rule 144A securities offering to refinance nine cogeneration power plants located in California.
- A major financial institution as underwriter of \$90 million non-credit enhanced tax-exempt private placement for coal-fired project in Pennsylvania.
- Certain institutional equity investors in a financing of telecommunication assets.
- The owner of proposed biogas facilities in connection with project development and financing.
- The owner of proposed coal fired power facility in connection with project development.
- An interstate oil pipeline owner in connection with proposed lease financing transaction to support expansion.
- The equity investors (including major insurance company and unregulated subsidiary of utility) in the development and financing of an approximately 45 MW waste-wood-fired power facility in North Carolina.
- A major independent energy developer in connection with project development, bridge financing, turbine financing, acquisition and dispositions of power assets and construction and term financing of numerous domestic gas fired power projects, including development of intercreditor arrangements with hedge counterparties and equity arrangements.
- Major financial institutions in \$128 million financing (and subsequent restructuring) of a hazardous waste incinerator in Ohio.
- An aerospace company in connection with proposed \$27 million financing of a satellite processing facility near Cape Canaveral, Florida.
- A major investment bank in connection with a Rule 144A/Reg S acquisition financing of portfolio consisting of ten gas-fired power projects.
- A partnership in the development and bank financing of two coal fired facilities in North Carolina and Virginia.
- The underwriter in connection with energy service arrangements for proposed indoor winter sports facility in California.
- The sponsor and borrower in connection with the \$1.4 billion portfolio construction and term financing of four merchant power projects in New York, Arizona, Michigan and Massachusetts.
- The lead underwriter in connection with the \$700 million 144A financing of 1000 MW gas fired facility constructed in Oswego, New York. This project was the first rated project financing of its kind.
- The developer of a proposed 185 MW wood fired electric generation project in southern Ohio, including negotiation of proposed senior debt, equity and tax investor arrangements.

- The sponsor and borrower in the \$92 million private placement involving four wood-fired power projects located in Michigan, Massachusetts and Pennsylvania.
- A financial guarantor in connection with \$350 million financing of a portfolio of peaking power plants owned in Louisiana and Illinois.

International Energy and Infrastructure Projects

Recent matters include the representation of:

- An unregulated utility subsidiary in connection with its proposed acquisition of an equity interest in a power project in southern India.
- A major financial institution in connection with \$88 million loan to finance construction of offshore gas drilling platforms and related equipment in South America.
- Major financial institutions in connection with various financing facilities extended to Quezon Power (Philippines), Limited Co. to construct a coal-fired generating facility. The financing included multi-tranche bank credit facilities and a registered debt offering and involved the participation of U.S. Eximbank and OPIC.
- The project owner and its U.S. sponsors in acquisition and financing of power assets to support mining operations in Irian Jaya, Indonesia.
- A major financial institution in connection with bridge financing and capital markets/securitization transaction involving airport infrastructure in Latin America.
- A major financial institution in connection with the \$750 million multi-tranche financing of refurbishment and expansion of power facilities in Barranquilla, Colombia.
- Major financial institutions in \$162 million 144A financing of Chilean petroleum coke processing and cogeneration facility.

Asset Acquisitions/Dispositions

Recent matters include the representation of:

- A financial institution in connection with \$530 million senior secured credit facility in connection with acquisition of generating assets in Boston.
- A major financial institution in connection with the consensual transfer of ownership by defaulted owner to lender of generating assets in Boston totaling approximately 2400 MW, including negotiation of third party operating, administrative, power marketing and fuel procurement agreements.
- An energy industry participant in connection with certain joint venture arrangements involving operation of power islands at a major industrial company's process facilities and related leasing arrangements.
- A major power developer in connection with its bid for hydroelectric generating assets located in northeastern United States.
- A major utility subsidiary in connection with leasing arrangements with respect to approximately 1459 MW of generating assets owned by a debtor in bankruptcy in Kentucky.

Admissions

Ellen is admitted to practice in New York.

Education

Fordham University School of Law, J.D., *cum laude*
Cornell University, B.A.

Publications and presentations

- “Alumni Panel Discussion,” Cornell University’s Sustainable Energy: Investing in Our Future” Conference, June, 2010. (Moderator)
 - “Financing Commercial Technology Renewable Energy Generation Projects under DOE’s 2009 Financial Institution Partnership Program,” Nixon Peabody Webinar, October, 2009 (Speaker)
 - “Financing Solar Energy” Institute for Professional and Executive Development, Inc. Conference, May 2009. (Speaker)
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Kenneth B. Weiner

Counsel

401 9th Street, N.W., Suite 900, • Washington, DC 20004
Phone: 202-508-8246 • Fax: 866-902-7950
E-Mail: kweiner@nixonpeabody.com
Website: www.nixonpeabody.com

Practice Areas

Construction
Energy, Utility, and Infrastructure
Project Development and Finance

Mr. Weiner's primary practice focuses on the development of energy projects and construction law, both domestically and internationally.

Domestically, his practices focuses on the development, construction, and finance of energy projects, including conventional fossil fuel electricity generation facilities, renewable energy generation facilities, including wind, solar, ethanol and biodiesel electric generation facilities, transmission assets, ethanol production facilities, and energy efficiency alternatives to generation. His construction practice specializes in engineering, procurement, and construction (EPC) contracting for a wide range of infrastructure projects, and he regularly represents both owners and contractors. He also represents both owners and operators in connection with operation and maintenance agreements for generation and transmission facilities.

His international practice focuses on international transactions and privatization in developing countries and includes representing developers of private power projects in developing countries, representing and advising governments and government-owned utilities in connection with privatization and independent power projects and representing contractors and operation and maintenance service providers in connection with independent power projects. Mr. Weiner has provided counsel on energy projects and related matters in Pakistan, India, Kyrgyzstan and other newly independent states of the former Soviet Union, Nigeria, Guatemala, Guam, Jamaica, Indonesia, Malaysia, Oman, Canada, Costa Rica, Dominican Republic, Nicaragua, Columbia and Honduras.

Mr. Weiner's practice also includes the design and implementation of franchise systems, preparation and registration of Franchise Offering Circulars, preparation and negotiation of franchise agreements, and enforcement of franchiser's intellectual property and contract rights. His general corporate practice experience includes mergers and acquisitions and leveraged buyouts; secured and unsecured financing and asset-based lending; trademark and copyright work, including registration, transfers, licensing and

infringement matters; computer software and technology licensing; and general representation of corporations and corporate housekeeping.

Publications

Co-author of International Project Finance, 4th Edition (Juris Publishing) (2011).

Admissions

Kenneth is admitted to practice in New York and District of Columbia

Education

New York Law School J.D., *summa cum laude*

Case Western Reserve University, B.S., Civil Engineering

Affiliations

Licensed professional engineer; prior to practicing law, practiced civil engineering for ten years, specializing in soil mechanics and foundations engineering.



Elizabeth W. Whittle

Partner

401 9th Street, NW, Suite 900 • Washington, DC 20004-2128

Phone: 202-585-8338 • Fax 866-947-3523

E-mail: ewhittle@nixonpeabody.com

Website: www.nixonpeabody.com

Practice

Energy/Project Finance

Experience

Practicing in the area of energy law, Elizabeth Whittle counsels clients with respect to natural gas, hydroelectric and electric regulatory matters. Specifically, Ms. Whittle represents clients before the Federal Energy Regulatory Commission (FERC) in gas pipeline, electric rate and hydroelectric licensing proceedings. She has been and continues to be actively involved in proceedings in connection with the transition to open access and competition in both the gas and electric industries. She drafts comments on proposed regulations before the FERC and the U.S. Department of Energy (DOE) and advises clients respecting pending and current energy-related legislation. She has advised clients and represented them before DOE on matters relating to the importation of natural gas from Canada, as well as the export of electricity to Canada.

Ms. Whittle represents an electric utility in electric proceedings addressing the restructuring of wholesale sales and transmission services, the ramifications and requirements of comparable service and the establishment of standards of conduct between electric utilities and their affiliates. Ms. Whittle has represented electric utilities before the FERC in connection with requests for acceptance of market-based and cost-based rates for wholesale power sales. Ms. Whittle represents project owners in hydroelectric re-licensing and compliance matters. Finally, Ms. Whittle is active in proceedings related to the establishment of independent system operators in the east.

Ms. Whittle represents independent power producers and qualifying cogeneration facilities in matters before the FERC and in connection with financing and other transactions. She has extensive experience before the NYISO.

Education

Washington College of Law of The American University, J.D
Colgate University, B.A.

Admissions

Admitted to practice in the District of Columbia and Maryland.

Affiliations

District of Columbia, Maryland and American Bar Associations.



Lee M. Goodwin

Partner

401 9th Street NW, Suite 900 • Washington, DC 20004
Phone: 202-585-8299 • Fax: 866-279-6662
E-mail: lgoodwin@nixonpeabody.com
Website: www.nixonpeabody.com

Practice Areas

Energy
Project Finance
Renewable Energy
International
Wind Power

Experience

Lee Goodwin focuses his practice on the development, acquisition, and financing of domestic and international independent power and related infrastructure projects. He has broad experience in the renewable energy sector, and has represented clients involved in wind, geothermal, hydro, and solar energy projects. Mr. Goodwin has been involved in projects throughout the United States and in more than thirty foreign countries. His clients have included energy project developers, equipment manufacturers, consulting and financial firms, multilateral lending institutions, and trade associations.

Mr. Goodwin has extensive experience in all aspects of project development, including the preparation and negotiation of electric power and steam sales contracts, tolling agreements, engineering procurement and construction agreements, equipment purchase agreements, operation and maintenance agreements, site leases, joint venture, partnership and LLC agreements, and purchase and sale agreements.

Representative Matters

- 500MW Combined Cycle Power Project Tolling Agreement: Represented a developer in the initial negotiation and subsequent restructuring of a tolling agreement for a 500MW two-train, combined cycle power project to be located in the upper Midwest. Unique features included coordination of staged in-service and termination dates for each train.
- 130MW Wind Farm PPA: Represented a developer in the successful negotiation of a power sale contract for a 130MW wind farm under development in the Midwest. The PPA negotiations were initiated and completed in a period of just five weeks in order to meet rigorous deadlines for qualification for federal Production Tax Credits.
- 360MW Simple Cycle Power Project Tolling Agreement: Represented a developer in the successful negotiation of a tolling agreement for the output of a 365 MW simple cycle power project to be located in the upper Midwest.
- 250MW Wind Farm PPAs: Represented a developer in the successful negotiation of four interrelated power purchase agreements with separate purchasing utilities from a single 250MW wind farm located in the upper Midwest. Unique features included managing both negotiations with individual off-takers, and coordination of multiple agreements to avoid internal inconsistencies.
- 365MW Combined Cycle Power Project Tolling Agreement: Represented a developer in the successful negotiation of a tolling agreement for the output of a 365MW combined cycle power project to be located in the upper Midwest.
- EPC and Equipment Agreements: Represented developers in the negotiation of a variety of construction and equipment purchase agreements for conventional and renewable energy projects, including EPC Agreements, Balance of Plant Agreements, Equipment Purchase Agreements, and Equipment Repurchase Agreements.

Admissions

Mr. Goodwin is admitted to practice in the District of Columbia.

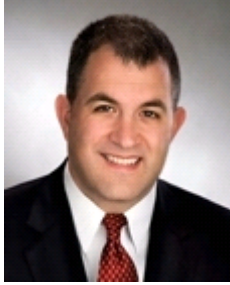
Education

University of Michigan Law School, J.D., *cum laude*

Dartmouth College, A.B., *cum laude* with High Distinction in Government

Publications

Mr. Goodwin is the author of more than sixty books and articles on energy project development and finance.



Jared C. Lusk

Partner

1300 Clinton Square • Rochester, NY 14604
Phone: 585-263-1140 • Fax: 866-402-1491
E-mail: jlusk@nixonpeabody.com
Website: nixonpeabody.com

Practice

Real Estate and Community Development
Agribusiness
Emergency Services

Experience

Jared Lusk is a member of the firm's Real Estate and Community Development group. He has extensive experience in a variety of legal matters, with a primary concentration on real estate development, planning, zoning, compliance with the New York State Environmental Quality Review Act, the Adirondack Park Agency Act, and other general municipal matters. Mr. Lusk's experience involves representing a wide variety of landowners, developers, retailers, public utilities, wind and other energy providers in projects throughout New York State. Mr. Lusk also represents a number of fire and emergency service providers throughout New York State.

Prior to joining Nixon Peabody, Mr. Lusk served as Town Attorney for the Town of Pittsford, New York, as an Assistant District Attorney for the County of Monroe, as well as in private practice.

Admissions

Mr. Lusk is admitted to practice in New York and Massachusetts.

Education

Syracuse University College of Law, J.D.
St. John Fisher College, B.A.

Affiliations

Mr. Lusk is active in the community. He currently serves on the Pittsford Town Council, as well as a member of the Board of Directors for ABVI-Goodwill. Additionally, he serves as Legal Counsel for Camp Good Days and Special Times, Inc. Mr. Lusk is a 20-year member of the Pittsford Volunteer Fire Department, where he served as Chief from 2007-2008 and as well as on the Board of Directors from 2003-2008. He is a member of the New York State and Monroe County Bar Associations, where he previously served as chair of the Municipal Attorneys Committee and a member of the Professional Performance Committee.



John B. Hood

Partner

1300 Clinton Square • Rochester, NY 14604

Phone: 585-263-1344 • Fax: 866-743-0238

E-mail: jbhood@nixonpeabody.com

Website: www.nixonpeabody.com

Practice

Real Estate & Community Development

Energy Project Development

Experience

John Hood is particularly experienced in real property tax abatement/exemption matters, property tax assessment review matters, and condemnation matters. In property tax abatement/exemption and assessment matters, he has primarily represented developers and taxpayers, and has worked with appraisers, industrial development agencies (“IDAs”), assessors, and others in negotiations for the establishment of proper levels of tax assessment, for the grant of relevant tax exemptions and related payment in lieu of tax (“PILOT”) agreements, and for host community benefit agreements.

In condemnation matters Mr. Hood has represented condemning authorities, including acquisition of properties or easements voluntarily to reduce costs, procedural compliance with the requirements of New York’s Eminent Domain Procedure Law to obtain title, and also the valuation of the condemnation compensation to be paid to condemnees. The condemnations have included easements, single parcel condemnations and multi-parcel condemnations. Representation has included New York State agencies, utilities and industrial development agencies. Mr. Hood has also represented condemnees to achieve just compensation when a condemnee’s property has been condemned.

In the past several years Mr. Hood has been involved in the following matters:

- Negotiating a PILOT Agreement for a new 1,080 MW electric generating power plant
- Negotiating a PILOT Agreement for a re-developed 750 MW electric generating power plant
- Negotiating PILOT Agreements and host community agreements for wind power projects in Western New York
- Negotiating a PILOT Agreement for a to-be-renovated manufacturing facility
- Challenging and the tax assessments on electric generating power plants, industrial manufacturing facilities and office buildings

Mr. Hood also has experience in commercial sales and acquisitions, commercial leasing, and structuring of projects to maximize IDA benefits. He has considerable experience in land use matters including zoning and land use approvals for commercial and industrial development, environmental reviews and related litigation.

Admissions

Admitted to practice in New York.

Education

University of Virginia School of Law, LL.B. (1969)

Amherst College, B.A.

Affiliations

New York State Bar Association (former co-chair, Real Property Law Section Committee on Uniform Laws; former chair, Committee on Tax Certiorari, Condemnation and Real Estate Taxation); Institute for Professionals in Taxation; American College of Real Estate Lawyers; Monroe County Bar Association.



Peter C. Trimarchi

Counsel

677 Broadway, 10th Floor • Albany, NY 12207

Phone: 518-427-2671 • Fax: 855-769-4931

E-mail: ptrimarchi@nixonpeabody.com

Website: www.nixonpeabody.com

Practice

Energy Project Development

Energy Project Finance

Environmental

Renewable Energy

Experience

Peter Trimarchi advises on all aspects of environmental law, with a particular focus on regulatory, enforcement, and transactional matters. He has extensive experience in project finance transactions, advising lenders and developers on the complex permitting and environmental issues arising in a wide variety of projects, including natural gas-fired power plants and renewable energy projects (wind, ethanol, and geothermal). He also has substantial experience in both environmental and commercial litigation matters.

Representative Matters

- Represented a wind developer in the project financing of six wind farms currently operating in upstate New York. Coordinated the due diligence for issuance of permitting opinions to both lenders and tax equity partners.
- Assisted a major automobile manufacturer obtain Clean Air Act permits for more than 60 dealerships throughout New York State in connection with a limited service campaign.
- Represented a major specialty chemical manufacturer in connection with a joint U.S. Environmental Protection Agency and New York State Department of Environmental Conservation investigation into violations of the Clean Air Act and the Resource Conservation and Recovery Act.
- Represented a private equity firm in connection with its acquisition of waste management facilities in New York and West Virginia, including one of the nation's largest medical waste incinerators.
- Represented a utility in two separate offerings of debt securities backed by the operation of seven wind farms in five states. The engagement required performance of environmental and permitting due diligence on each of the wind farms, followed by drafting of securities disclosure statements and negotiation of the terms of permitting opinions with local counsel in each jurisdiction.
- Represented various lenders in financing for the development of five separate ethanol production facilities. The engagement required conducting detailed due diligence on environmental and permitting matters, and coordinating that review among developers, the banks, and their respective environmental engineers.

- Represented ITR Concession Company LLC in its widely publicized \$3.8 billion acquisition of a concession to operate the Indiana Toll Road. Tasks included environmental due diligence, extensive negotiation of the environmental provisions of the Concession and Lease Agreement, and coordination of the transfer of over one hundred permits.
- On a pro bono basis, represented Fresh Youth Initiatives, Inc. in connection with the remediation of a significant oil spill in upper Manhattan. Mr. Trimarchi was able to recover 100% of FYI's cleanup costs from the New York Oil Spill Fund.

Admissions

Mr. Trimarchi is admitted to practice law in New York.

Education

University at Buffalo School of Law, J.D., *cum laude*

University at Albany, B.A., *cum laude*

Representative Publications and Presentations

- "New York's Solar Incentive Program: Lessons Learned from Other States," Northeast Photovoltaic Roundtable, August 2012. (Panel Moderator)
- "Environmental Issues in Business Transactions: 2012 and Beyond," New York State Development Council's Economic Development Course. (Presenter)
- "Strategies for Distressed Properties: Environmental Risks and Opportunities," Lorman Seminars, Albany. (Presenter)
- "Global Warming: A View from Main Street, New York," Albany Law School Summer Seminar. (Presenter)
- "Greenhouse Gas Regulation in the United States: It's Closer Than You Think," *Wall Street Lawyer*, Vol. 11, No. 1, January 2007.

Affiliations

Mr. Trimarchi is a member of the New York State Bar Association. He is a member of the Environmental Law Section's Executive Committee and currently serves as Co-Chair of the Biotechnology, Nanotechnology, and the Environment Committee.



William S. Andrews

Partner

401 9th Street, NW, Suite 900 • Washington, DC 20004-2128

Phone: 202-585-8392 • Fax: 866-947-3862

E-mail: wandrews@nixonpeabody.com

Website: www.nixonpeabody.com

Practice

Energy Project Development and Finance

Experience

Bill Andrews concentrates his practice on the commercial and financial aspects of energy, capital-intensive industrial, and infrastructure projects.

During the past several years, Bill has been responsible for leading project teams representing the CapX 2020 Utilities, Prairie State Generating Company, the Indiana Municipal Power Agency, Louisville Gas & Electric Company and Kentucky Utilities Company, and the Missouri Joint Municipal Electric Utility Commission, among others, in connection with the development, construction or financing of large scale energy generating or transmission facilities, sports venues, and other industrial facilities. In the last year, Bill has been engaged by clients in connection with engineering, procurement, and construction contracts for wind, coal, and gas-fired energy generating facilities, pollution control facilities, and transmission assets valued at more than \$10 billion.

Transmission

Bill is project counsel to the 11 load serving entities that are participants of the CapX 2020 Transmission Expansion Projects. In that capacity, Bill has led the negotiation among the participants of key project agreements including the Construction Management Agreement, and the Operation and Maintenance Agreement, among others. The CapX projects are designed to substantially enhance the transmission grid in Minnesota and surrounding states. In December 2012, the seventh and last CapX 2020 Project closed. The aggregate construction cost of the projects exceeds \$2.0 billion. Bill and his partner, Lori Green, were selected by *The American Lawyer* as one of its “Dealmakers of the Year 2011” for their work on the CapX 2020 Transmission Expansion Projects and are featured on the magazine’s April cover.

Bill also represents Southern Cross Transmission LLP in connection with its HVDC 3000 MW transmission project that will stretch from the eastern boundary of ERCOT through the states of Louisiana and Mississippi. He also represented the developer of one of the CREZ projects in Texas in connection with the engineering, procurement, and construction of the project. In May 2007, Bill concluded the successful negotiation of the engineering, procurement, and construction contract between Trans Bay Cable, LLC, Siemens Power Transmission and Distribution, Inc., and Prysmian Construction Services, Inc. for a 55-mile HVDC sub-marine transmission cable under the San Francisco Bay capable of transmitting 400 MW between Pittsburg, CA, and the City of San Francisco.

Generation

Bill currently represents the Prairie State Generating Company LLC in connection with the development of a new approximately 1600 MW, mine-mouth, pulverized coal-fired power plant now under construction in southern Illinois. During 2010, Bill led a team in the \$4 billion restructuring of the Prairie State Energy Campus transaction from a Target Price agreement to a fixed price turnkey contract. During 2006, Bill was counsel to the Indiana Municipal Power Agency, which led the team negotiating a participation agreement among six participants and Peabody Energy.

Louisville Gas and Electric Company and Kentucky Utilities Company, both investor-owned utilities located in Kentucky, engaged Bill during 2012 in connection with the development of a new large scale gas-fired generating facility and the development and construction of several large scale air quality control projects for generating stations in the utilities’ fleet. In 2010, Bill negotiated the equipment procurement and turnkey EPC Contract for a new SCR pollution control facility for one of the units at Kentucky Utilities Company’s E.W. Brown Generating Station. During 2007, Bill successfully completed negotiating the engineering, procurement, and construction contract for the new Trimble County 2750 MW coal-fired generating facility, which is now in service. In the past several years, Bill has also represented LG&E and Kentucky Utilities Company in connection with the engineering, procurement, and construction of six other power plants located in Texas, Georgia, and Kentucky as well as participation agreements with municipalities for joint ownership of generating assets, and the procurement of major engineered equipment including boilers, turbines, and pollution control equipment.

Coal Gasification

Bill has represented Green Rock Energy, LLC in connection with:

- the negotiation and drafting of an engineering, procurement, and construction agreement for a new gasification polygeneration facility being developed by Faustina Hydrogen Products, LLC that will use pet coke and high sulfur coal as feedstocks to produce saleable anhydrous ammonia, methanol, industrial grade CO₂, and sulfur. The project will be constructed in St. James Parish, Louisiana; and
- the negotiation and drafting of an engineering, procurement, and construction agreement for a new gasification polygeneration facility being developed by Southeast Idaho Energy, LLC that will use coal as a feedstock to produce ammonia and urea.

In April 2006, Bill concluded the successful representation of the Missouri Joint Municipal Electric Utility Commission in connection with a participation agreement for and acquisition of an interest in the Plum Point Energy Project. The project is a 660 MW subcritical pulverized coal generating facility currently under construction in City of Osceola, Arkansas. The Project was named Mid-West Deal of the Year by *The Bond Buyer*.

Bill also represents the firm's investor-owned utilities, independent power producers and municipalities in the acquisition of power generation, air pollution control equipment, and long-term maintenance and service agreements. Bill assists these clients in the development of template procurement and construction documents and is often a key participant in the negotiation of these agreements.

Infrastructure Facilities

Bill has represented clients in the structuring and financing of public infrastructure facilities, including a public/private partnership venture with the City of Anaheim, California, to construct and operate the arena for professional basketball and hockey. Bill handled the lease negotiations with the facility's anchor tenant, the NHL Mighty Ducks. During 2006, Bill was engaged in connection with the financing of the new Yankee Stadium and the New York Mets Stadium, both of which are currently under construction.

Bill has represented the governmental entities of the Commonwealth of Puerto Rico in connection with the development, operation, and maintenance of new entertainment and hospitality facilities, including the Coliséo de Puerto Rico in San Juan and the Puerto Rico Convention Center in Hato Rey, Puerto Rico. He also represented a public benefit corporation that was the first New York State entity actively seeking to create a public/private partnership with private independent energy developers and has been a consultant to the state of Florida regarding privatization of the state's correctional facilities.

Prior to joining the firm, Bill served as Legislative Assistant and Administrative Assistant to U.S. Representative James M. Collins (Texas). He frequently is invited to make presentations to governmental entities and at conferences on the subjects of the EPC contracting and energy project development, particularly in a multiparty setting.

Admissions

Admitted to practice in the District of Columbia, New York, and Florida.

Education

University of Virginia, J.D.

University of Pennsylvania, A.M.

Lafayette College, A.B.

Mott MacDonald Company Information

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Mott MacDonald is the North American entity of the UK-based Mott MacDonald Group. Mott MacDonald provides engineering and design services to the Power Industry in North America. We have offices in Westwood MA, and Houston, TX. Our staff consists of multi-discipline professionals with wide ranging experience in the power industry.



**INVESTORS
IN PEOPLE**

Mott MacDonald is an independent, private company wholly owned by its employees. Currently one in five of our 14,000-strong global staff is a shareholder, a proportion which grows annually. A shareholders' committee holds the Board to account on behalf of the employee owners.

Our ownership and reward system give every employee a vested interest in achieving the best possible outcomes on the projects they undertake. Globally, all staff enjoys the same benefits of employee ownership. Everything we earn is returned to our staff, rewarding them for their efforts in supporting the success of our customers.

Our long-term focus is supported by our system of governance. Mott MacDonald is collegiate in style, with strategic decisions made collectively by our management, through consensus. The Group Board is answerable to our employee shareholders, safeguarding against any actions that may be perceived as not being for the collective good. It is the Board's remit to protect the firm's long-term stability and vitality.

Mott MacDonald's ownership, structure and management are common around the globe. Each of our offices are locally managed and substantially staffed by nationals of that country. At the same time, every part of the business can call on the resources of the entire Group, enabling us to deliver locally tailored services and solutions to world class standards.

Mott MacDonald's expertise and hands-on experience in the power & industrial engineering industry is extensive, spanning more than three decades. Our involvement ranges from conceptual design and detailed engineering right through interconnection, start-up and testing, commissioning and full-scale operation. Our clients are project owners, EPC contractors, power delivery utility companies, industrial facility owners and independent power producers. In every instance, we bring an extraordinary level of project knowledge, field experience, and professional skills.



"Mott MacDonald is run on strong values. The firm gets top scores for making a real difference to the world and protecting the environment."

Sunday Times
Best Big Companies

Fundamental to the success of any project is the know-how of its engineering team. Our engineers and designers have expertise in mechanical, electrical, instrumentation and controls, civil, and structural engineering. The depth of our field experience rivals even the largest power engineering firms. As a group, we understand the demands of any size project, we know the regulations and permitting requirements, and we can manage your project through even the most unexpected twists and turns.

Worldwide Principal Offices



Mott MacDonald has a large pool of experienced multi-disciplinary resources including:

	EU	A	MESA	AP	A	N	SA
Civil/Structural related	3,154		1,256		420		983
Electrical, C & I related	956		414		108		278
Mechanical & Process related	448		1,107		192		610
Environmental	421		177		19		97
Architecture	26		14		7		21
Other professional	1,675		466		151		130
Administration & support	700		62		94		188

Parent Company

Mott MacDonald Group Limited (MMGL)
Mott MacDonald House, 8-10 Sydenham Road
Croydon, CR0 2EE
T: 020 8774 2000 F: 020 8681 5706 W: mottmac.com
Registration no. 1110949
Registration date 30 April 1973

Gross Revenue (MMGL)

2008	\$1.46B
2009	\$1.62B
2010	\$1.65B
2011	\$1.72B
2012	\$1.77B

MMGL Duns: 219252889

MM Inc Tax ID: 800034169

Safety is of utmost importance to the success of Mott MacDonald projects and the continued success of the corporation. The Group Health and Safety Policy Statement reflects the importance of safety with a commitment for complying with statutory standards and incorporating reasonable practical standards for minimizing risk to its employees.

The Mott MacDonald safety program, Injury Illness Prevention (IIP) Program has been developed to establish a common framework for executing safety protocol within the corporation and projects. The program is comprised of the following 8 elements.

- Responsibility
- Compliance
- Communication
- Hazard Assessment
- Accident/Exposure Investigation
- Hazard Correction
- Training and Instruction
- Recordkeeping

One of the most important elements of the IIP Program is the process for developing a hazard and risk assessment that assists with recognizing, evaluating and controlling workplace hazards inside and outside the office. Office and project-specific risk assessments are conducted and documented by the appropriate manager and communicated to Mott MacDonald employees.

Health and safety policy

Mott MacDonald Group policy statement | January 2012



Health and safety

Commitment	Approach
<ul style="list-style-type: none">It is the intention of the Mott MacDonald Group that its activities will, as a minimum, comply with all relevant statutory and other provisions, and that all reasonably practicable measures will be taken to minimise risk to its employees or others who may be affected by its operations. In every case, a high practicable standard of health and safety will be pursued. The Mott MacDonald Group is committed to the integration of safety into all areas of corporate activity and to implement a process of continual improvement in this regard.	<ul style="list-style-type: none">It is the policy of the Group Board to operate an Integrated Management System (IMS). The requirements of the system that address health and safety are based on, and conform to, the International Standard ISO45001:2018. Safety managers are available to assist with the implementation of this policy, and provide information, advice and support to employees on health and safety matters.Adequate financial and technical resources will be made available to allow this policy to be carried out. Information and training on health and safety will be provided to all staff as necessary for them to carry out their work safely, and without risk to health.
Responsibility	
<ul style="list-style-type: none">A Group Board director is responsible for the Health and Safety Policy and for the effective implementation, maintenance and review of health and safety management. The Group safety manager is responsible for its effective and economic operation and development on a day-to-day basis.Management and supervisory staff have the responsibility for implementing this policy throughout the Group, so that health and safety considerations are always given priority in the planning and execution of all work.All employees and contractors are expected to co-operate with the Group in carrying out this policy so that their own work, as far as is reasonably practicable, is carried out with the minimum risk to themselves or others.	<ul style="list-style-type: none">This Group Policy Statement will be displayed in appropriate locations throughout the Group. This policy provides the framework for setting and reviewing health and safety objectives at different levels throughout the Group.

K. S. Daniels
K. S. Daniels
Chairman

Training is vitally important as part of continued efforts to improve the knowledge base of Mott MacDonald employees with respect to health and safety. Required awareness training for Mott MacDonald staff includes an introduction to the Mott MacDonald IIP Program, hazards of the office setting and a review of construction safety hazards that employees may encounter outside the office at a typical project site. This training is in addition to specialized training that may be legislatively required.



The IIP Program is continuously reviewed to reflect current standards and approaches for conducting safe work activities. Valuable feedback from staff and the results of project audits is used to update the program on an annual basis.

Mott MacDonald is committed to Safety and has a “Zero Accidents” culture that will permeate through all of our operations. Safety is never compromised. We not only believe that “zero accident safety” is achievable – we are striving to achieve it already. Mott MacDonald is committed to working safely for the benefit of our employees and the general public. We are committed to improving the industry as a whole. We will combine the best of all of our team’s safety practices to develop a “best in the industry” safety program.

Finally, and most important, Safety needs to be of the highest priority. As such, many reports for management will include a report on safety, but more importantly, reports used by specific groups or functions will include a safety portion that addresses the key safety elements from their Job Hazard Analysis. Items such as deficiencies, workers in high risk situations, identification of the latest tool box talks, weather and other key tough points will be included and reviewed regularly.

Mott MacDonald's US operations have received certification for OSHAS 18001:2007.

Mott MacDonald is committed to quality, environmental stewardship and safety. Our Integrated Management System (IMS) program enhances our work by establishing guidelines for project management that assures a quality product is delivered safely, on time and within budget.

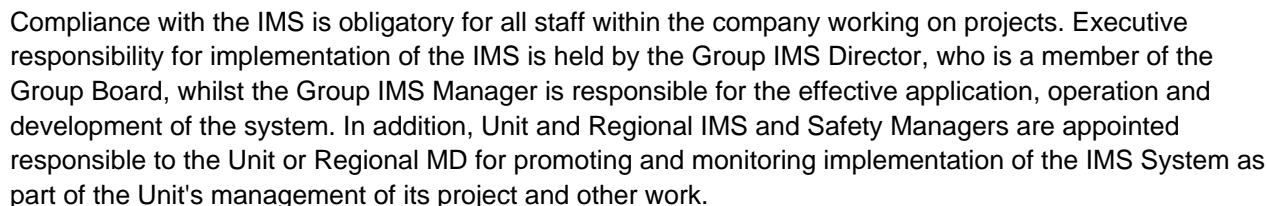
Our Approach is as follows:

- Establishment of standard procedures and guidelines.
- Selection of appropriate resources with the necessary experience to carry out the work in accordance with our quality policy.
- Provision of independent quality review and checking of the project deliverables.
- Performance of regular audits by our IMS Representative to ensure adherence to quality procedures.

The IMS process is designed to account for client feedback from project to project which enables us to develop better communication and understanding of client’s specific needs with every project that we work on.

The IMS program provides processes to help manage and minimize risk on projects; commercial, professional, technical and environmental risks, and those relating to Health & Safety. The requirements of our IMS program complies with international standards ISO 9001: 2008 (Quality), ISO 14001: 2004 (Environment) and OHSAS 18001: 2007 (Health & Safety).

ISO9001:2008 Certificate



Mott MacDonald Quality Policy

Quality

The Group IMS System is an online Intranet based system which brings the benefits of immediate access to the management system, with automatic workflow and effective communication. It is available for viewing by Clients at any of our offices upon request.

General Manager

One of three founding principals at Careba Power Engineers, LLC which joined the Mott MacDonald Group in 2007, has over 30 years of experience in engineering, construction, start-up and testing of power generation facilities. Experience has involved managing all phases of projects from initial project development through start-up and testing. Executed lump sum turnkey contracts for both domestic and international projects ranging in size from 15 MW to 1000 MW.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Principal
Senior Project Manager
Manager of Mechanical and Civil/Structural Engineering
General Manager

1998-2000 Stone Webster

Project Manager

1982-1998 Chas T. Main Parsons

Chief Mechanical Engineer/Project Engineer

Calpine, US

Calpine

Project Manager providing engineering and design support services to Calpine for their combined cycle operating facilities as well as development of new projects on an as needed basis.

Takoradi T3, Ghana

SWES

Project Manager on the detailed design of a 150 MW combined cycle plant located in Ghana, Africa. Plant configuration consists of four (4) combustion turbines, operating on diesel, LCO or natural gas, four (4) HRSG's, a 40 MW condensing steam turbine with cooling tower and CTG inlet chilling system. Mott MacDonald provided detailed engineering and design for all disciplines on this project.

Sentinel Energy Project, US

Gemma Power Systems

Project Director for detailed design of an 800 MW natural gas fired simple cycle power project in Palm Desert, CA utilizing eight (8) GE LMS100 combustion turbines. Mott MacDonald provided detailed engineering and design of all aspects of the project and on-site support during project construction.

Intergen, US

Intergen

Project manager as Owner's Engineer for 1250 MW combined cycle project in southern United States, primarily based on "F" technology combustion turbines. Mott MacDonald provided full development support services including environmental, site development, preparation of site plans and process diagrams and preparation of a pre-qualification package to support EPC bids for the facility.

Competitive Power Ventures, US

CPV

Project manager as Owner's Engineer for multiple combined cycle projects, primarily based on "F" technology combustion turbines. Mott MacDonald provided full development support services including site development, preparation of site plans and process diagrams and preparation of minimum design criteria to support EPC bids for the facility.

Pure Energy Resources, NY

Pure Energy Resources

Project manager as Owner's Engineer for multiple combined cycle projects, primarily based on "F" technology combustion turbines. Mott MacDonald provided full development support services including site development, preparation of site plans and process diagrams, cost estimates, and preparation of minimum design criteria to support EPC bids for the facility, including proposal in Long Island, NY.

Brooklyn Navy Yard Cogeneration Facility, NY

Brooklyn Navy Yard Cogeneration

Partners

Engineering manager for the 286 MW facility utilizing two (2) Siemens V84.2 gas turbines and two (2) condensing Siemens steam turbine generators. Start up manager during final facility commissioning and testing. Also responsible for all permitting interfaces on first independent power project constructed in New York City.

Holtville Power Plant, NY

NYP&A

Project engineering manager for the EPC services on the Holtville Combined Cycle Plant utilizing a Siemens V84.2 gas turbine.



General Manager

BS Mechanical Engineering

Registered Professional Engineer:
MA, CT, CA

Project Management

Owner's Engineer and Project
Development Support

Power Project Detailed Engineering
and Design

On-Site Experience

Manager of Engineering

Over 30 years of experience in engineering and design of Wind Energy plants, power generating plants, substations, transmission and Electrical systems analysis.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Manager of Engineering

1989-2001 Vanderweil Engineers

Chief Electrical Engineer

1970-1998 Chas T. Main Parsons

Chief Electrical Engineer

Wind Energy Projects

Project director responsible for the engineering and design of several wind energy generating plants ranging in size from 20 MW to 250 MW. The scope of services included development support, permitting support, detail design of the wind turbines collector systems, turbines grounding, substations detail design, transmission line detail design and engineering support during construction, start-up and performance testing. The projects include:

- Clinton 100 MW wind energy plant in Clinton New York.
- Altona 100 MW wind energy plant in Altona New York.
- Wethersfield 130 MW wind energy plant in Wethersfield western New York.
- Great Plains 240 MW wind energy plant in the Texas Panhandle

T D Projects

Chief Electrical engineer and or project manager responsible for the detailed engineering and design of a large number of substation and transmission projects. Recent work includes the following:

- 345kV ring bus substation for Xcel Energy for interconnecting the Noble Great Plains wind project in Texas, including three 115 Kv transmission lines, 4 miles, 11 miles and 14 miles.
- 230kV ring bus substation for NYPA for interconnecting for the Noble Clinton wind project in New York.

- 230kV ring bus substation for NYPA for interconnecting for the Noble Altona wind project in New York.
- 230kV ring bus substation for NYSEG for interconnecting for the Noble Wethersfield wind project in New York, including a 6 mile 230kV transmission line.
- 138kV GIS substation and two gas filled pipe type cables for connection with ConEd in Brooklyn, NY.
- 138kV substation in Long Island, NY with a 138kV gas filled pipe type cable for connection with LILCO.
- 69kV substation with a three (3) mile 69kV solid dielectric cable for Freeport Electric, NY.
- Managed Master Service Agreement assignments for the National Grid in New England providing substation upgrades, protection and relay settings for over 40 projects.

Power Generation Projects

Chief Electrical engineer and or supervising lead engineer responsible for the detailed engineering and design for power generation projects. Recent work includes the following:

- Development support for combined cycle power plants for CPV, EMI, InterGen and others.
- Exiting Power plant betterment for Calpine, AES, Dominion, and others

Detail Design

Sentinel Energy, California

800 MW Power Plant consisting of eight (8) GE LMS 100 gas turbines

Ta arodi T3 , Ghana

150 MW Combined Cycle Plant

Desoto Power Plant, Florida

360 MW simple cycle with two (2) 7FA GE combustion turbine generators

NYPA, Long Island, NY

160 MW Holtsville combined cycle plant

Dighton Power Associates, MA

170 MW plant included a single shaft ABB IIN2 gas turbine.

Mission Energy, Brooklyn, NY –

286 MW combined cycle plant with two Siemens V84.2 gas turbine generators.

Owners Engineer

Public Service New Hampshire, Portsmouth, NH – 50 MW coal and wood fired biomass repowering of the Schiller Station, Unit #5.

Gen Power, LLC Longview Power Project, West Virginia 700 MW pulverized coal fired, supercritical unit.



Engineering Manager; Transmission & Distribution America

MS Electrical Engineering,
Northeastern University

BS Electrical Engineering, Southwestern
Louisiana University

Registered Professional Engineer:
MA,NY,PA,FL,MD,CT,WI,TX,WA,CA, VT
and NH

Specialisation – Engineering, design of
Wind Energy, Power Plants, Substations,
Transmission and Electrical systems
analysis.

Summary CV

Project Director

Mr. Sullivan is one of three founding principals at Careba Power Engineers, LLC (now Mott MacDonald, LLC). He has over 35 years of diverse project management, operations and engineering management experience in domestic and international power generation. Mr. Sullivan has extensive experience with coal fired power plants including pulverized coal and circulating fluidized bed type designs, as well as combustion turbine based simple cycle and combined cycle projects. Mr. Sullivan is one of Mott MacDonald's senior project managers. Mr. Sullivan was V.P. of Engineering for Parsons Energy & Chemicals (a division of the Parsons Corporation) in the 1990s.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Project Director

1999-2001 Vanderweil Engineers

Power Sector Manager

1979 1983

1987-1999 Chas T. Main Parsons

Project Manager

1983 1987 Cogeneration Management Company

(subsidiary of Harvard University)

Senior Project Engineer

1970 1979 Stone Webster Engineering Corporation

Lead Engineer

Erbil Combined Cycle Conversion, Iraq

Mass Global Investment

Proposal Manager and Project Manager for the conversion to combined cycle of the Erbil Simple Cycle Power Plant in Erbil, Kurdistan, Iraq. Prepared proposal, wrote and negotiated the contract for the Owner's Engineer for the 1000 MW GE 9E gas turbine (eight machines) simple cycle conversion to combined cycle project. Overview conceptual engineering, including preparation of the Design Criteria, and Performance of design review during execution of the EPC Contract.

Longview Power Project, US

GenPower, LLC

Project Manager as Owner's Engineer for a 700MW (net) pulverized coal fired, and supercritical unit in West Virginia. Project was executed on an EPC basis by a consortium of Siemens Power and Aker

Construction, Inc. Substantial completion date was achieved in December 2011.

Schiller Station Project, US

Public Service New Hampshire

Project Manager as Owner's Engineer on the 50 MW coal and wood fired biomass repowering of the Schiller Station, Unit #5.

DeSoto County Generation Plant, US

Gemma

Project Manager for a 350 MW simple cycle, dual fueled peaking facility, which utilized two GE 7FA gas turbines. Scope of services was complete detailed design including the 230 kV Switchyard and electrical interconnect.

Brooklyn Navy Yard Cogeneration Facility, NY

Brooklyn Navy Yard Cogeneration

Partners

Project engineering manager and site liaison for construction and start-up for the 286 MW, EPC, combined cycle cogeneration facility. Power train consisted of two (2) Siemens V84.2 gas turbines and two (2) condensing (once thru) Siemens steam turbine generators. Site responsibilities included coordination with outside parties to facilitate completion of the project in the least amount of time on a fully operational industrial park. On-site thirteen months thru performance testing and substantial completion.

Genesis Power Corporation, MA

Project Manager as Owner's Engineer for two 2x1 7 FA combined cycle power plants (640 MW each); one in Arkansas and the other in Mississippi. Scope of work included conceptual design, site layouts, mass and energy balances, flow diagrams, development of minimum design criteria and preparation of EPC bid documents that would be used to solicit proposals from prospective pre-qualified EPC Contractors.

Cogentri, Charlotte, NC

Project Manager as Owner's Engineer for front-end conceptual engineering for four (4) power projects, ranging in size from 680 to 1070 MW, using GE 7FA machines in combined cycle configuration.

Former member of PowerGen Program Committee

Authored several papers on fuel constituent effects on boiler conversions



Project Director

MS Engineering Management

BS Mechanical Engineering

Registered Professional Engineer: AZ, PA, ME, TX, LA, NH, NY, VT, NJ

Project Management

Owners Engineering

Design Projects

Bid Evaluation

On-site Experience

New Plant Construction

Conceptual Engineering

Retrofit Construction

Projects Director for transmission & distribution projects within the USA T&D Division with 20 years of power engineering experience. Principal areas of expertise include renewable energy generation, thermal generation, utility interconnect support, high-voltage substation design, protective relaying and power plant development.

2001 present Careba Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Projects Director
Electrical Group Manager
Sr. Project Manager
Sr. Electrical Engineer

1992-1998 Vanderweil Engineers

Electrical Engineer

Mass Global, Amman Jordan

Mass Global

Owner's engineering services for conversion of a large gas-fired power plant in Kurdistan, Iraq. The project included conceptual design and design criteria development for two 250MW steam turbine generators and a new 400kW switchyard.

Deepwater Wind, Hoboken NJ

Deepwater Wind

Owner's engineering services for various large offshore wind farms being developed in the North Atlantic region of the United States. The projects combine for over 3000MW currently in development.

Noble Environmental Power, Essex CT

Noble Environmental Power

Project manager for detailed design of four wind farm interconnection facilities in upstate NY. Services included two new 230kV switchyards, wind farm collector substations and major expansions to an existing 230kV NYPA switchyard. The projects generate over 400MW of renewable energy to the region.

Longview Power, Maidsville WV

GenPower

Owner's engineering for the interconnection of a 700MW pulverized coal fired supercritical power plant near Morgantown, WV. The interconnection included a new

500kV expandable ring bus for Allegheny Power, a five mile 500kV transmission line and a substation at the power plant.

Northeast Utilities Service Company, Berlin CT

NUSCO

Project Manager/Director for various substation expansion projects at multiple locations in western Connecticut. Mott MacDonald has been working under a continuing services agreement since 2004.

National Grid, Waltham MA

National Grid

Project Manager for transmission substation expansion projects at various locations in western Connecticut. MM/CPE has been working under a continuing services agreement since 2003.

New York State Electric and Gas, Binghamton, NY

NYSEG

Project Director for a 115kV substation expansion for NYSEG in eastern NY State. The expansion is being undertaken to allow for the interconnection of a large flywheel facility being constructed by Beacon Power. Enhancements include site upgrades to meet new Northeast Power Coordinating Council requirements as well as adding a pilot protection scheme between NYSEG and National Grid.

New York Independent System Operator, Rensselaer, NY

NYISO

Project Director for Class Year 2010 Part 1 Facility Studies being performed under a Master Services Agreement. Work includes developing and compiling the various project schedules, construction responsibilities, cost estimates, design standards and preliminary drawings for new generating facilities in New York State.



Projects Director

MSc Electrical Engineering
BSc Electrical Engineering
Professional Engineer: NY

Extensive knowledge of electrical transmission and distribution engineering with a proven track record of ensuring projects meet a client's milestone dates.

Publication of off-shore wind technical paper at AWEA Windpower 2009.

Article in Power Engineering magazine discussing wind generation interconnections.

Presentation to IEEE PES Boston Chapter on the technical challenges of offshore wind in 2010.

Tutorial on Smart Grid Technologies at IEEE PES ISGT2012 Conference.

Summary CV

Senior Electrical Engineer

A senior electrical engineer and project manager with over 13 years of power engineering/design experience. Has high voltage experience in the engineering and designing of switchyards, substations, overhead and underground transmission/distribution. This work has been done for utilities, power plants, developers, and contractors. Has worked on engineering and design of power plants, transmission/distribution systems and protective relaying/control. Has experience in specification, design, and inspection of high and medium voltage solid dielectric cable and splices.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Senior Electrical Engineer/Project Manager

1999 - 2001 R. G. Vanderweil Engineers, Inc

Electrical Engineer

Takoradi T3, Ghana

SWES

Lead Electrical for power plant design on a 150 MW 50Hz combine cycle power generation facility utilizing four gas turbines with HRSG's to one steam turbine. Work includes, bid evaluation, vendor document review, electrical distribution and specification. Spend time in Africa on-site during construction to provide site engineering and construction guidance/supervision.

CMEEC Al Pierce Re-powering, USA

GEMMA Power Systems

Lead Electrical/Design Engineer on a 90 MW simple cycle power generation facility utilizing one GE F7 dual fuel combustion turbine. Provided field engineering and help with utility energization plans. Developed the specification, factory test review and field engineering assistance of a 900 foot run of Kerite 115kV underground solid dielectric cable connection to an existing 115kV switchyard.

Village of Freeport, NY

Welsbach Electric

Lead Electrical/Design Engineer on the detailed design for one 69 kV modular substation at Freeport and one 69 kV modular transition station at Bellmore. Provided field engineering oversight of the fabrication and final field construction and testing of the substation. Prepared detailed design support for 15,000 ft of Okonite 69kV underground cable including cable

pull & tension calculations, manhole design, sheath termination and grounding. Field inspection and construction supervision of 69kV cable splices for sectionalize transposed shields cross-bonded cable system.

Great Plains Windpar, USA

Noble Environmental Power

Provided development engineering and owner's engineering of the EPC bid and construction of this 240MW, multi-site, multi-phase wind park project. This project had the construction of a new 345kV breaker and Half Utility interconnection yard with Auto-transformer to 115kV, 115kV overhead Transmission lines, 115kV and 34.5kV Wind park collection substation, underground 34.5kV collector cables, and the wind park work to install the GE 1.5MW wind turbines.

New York Independent System Operator, Rensselaer, NY

NYISO

Project Manager on Class Year 2010 Part 1 Facility studies being done under the Master Agreement for Consulting and Technical services. Work includes managing the collection of information from affected utilities, NYISO, and Developer to draft the NYISO require Part 1 facility studies for the interconnection process. If required, the development of engineering/construction schedules, cost estimates, preliminary drawings if not provided by either Utility or developer. The Facility study is to clearly scope the requirement for a project interconnection, identifying the costs, schedule, design requirement, affected system upgrades with their cost and schedule for upgrade work to be completed.

Deepwater Wind, Hoboken NJ

Deepwater Wind

Lead Engineer on Development work for multiple offshore wind projects. Work includes the preliminary engineering and development to determine site interconnection location, one-lines, layouts, cost estimates, and filing of interconnection application data.

Noble Bliss Wind Park, NY

Noble Environmental Power

Worked on preliminary layout and design of the 5.5 mile 115kV transmission line. Began the Plan and profile drawings using PLS Cad. Worked on the Preliminary layout and design of the 34.5kV Collector (distribution) system, this included the development of 34.5kV pole details for the Hendrix overhead collector distribution.



Senior Electrical Engineer/Project Manager

B.S. Electrical Engineering

Registered Professional Engineer: MA

Engineering and Design of High Voltage Switchyard, distribution and generation

Specification, design and inspection of medium and high voltage cable

Field Engineering

Start-up and commissioning

A senior electrical engineer at Mott MacDonald with 30 years of experience with major power projects including switchyard interconnections, and has spent considerable time in the field supporting construction and start-up of EPC power projects. Often provides assistance in support of other projects, on standards or code interpretation and from personal experiences.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)

Supervising Engineer

Sentinel Energy Project, US

Gemma Power Systems

Supervising Electrical Engineer

responsible for the electrical design for an 800 MW simple cycle plant. The plant consists of eight natural gas-fired General Electric (GE) LMS100 combustion turbine generators (CTGs) operating in simple cycle mode. The project included a 230kV switchyard with ten generator/transformer 230kV breakers and tie line breakers. The Electrical auxiliary system included two 230kv/4Kv station service transformers, 4160v switchgear, 480v switchgear and several 480v MCC. At the conclusion of the design Mr. Carey transferred to the field and assisted in construction monitoring, testing and energization.

CPV Keenan II, US

CPV

Owner Engineer responsible for the electrical system design review for 151.8 MW (66 Siemens SWT-2.3-101) Wind Farm Project, located in Keenan Oklahoma, USA. Mott MacDonald's scope of work included the review of EPC contractor design, substation design in the home office. During construction Mr. Carey located to the site and performed as the construction manager on behalf of the Owner CPV. He managed construction and assisted in startup and plant commissioning.

Longview Power Project, US

GenPower, LLC

Owner's Electrical Engineer for a 700 MW (net) pulverized coal fired, supercritical unit currently under construction in West Virginia. Project is being constructed on an EPC basis by a consortium of Siemens Power and Aker Construction, Inc. Responsible for the review and comments

to the projects design and vendor documents.

RBF Port Neches Project, US

Renewable BioFuels, LLC

Lead Electrical Engineer on a 160MGY gallons per year biodiesel project. Responsible for the design of a 10MVA electrical distribution system feeding two production trains. Developed hazardous area classifications plans to coordinate with the specification and placement of equipment.

Shuwai h Power Plant, uwait

SWES

Lead Electrical Engineer on a 300 MW 50HZ simple cycle power generation facility utilizing six GE LM6000 combustion turbines. Work included a site review of existing 132kV GIS interconnecting utility switchgear, equipment specification, and review of design documents.

Al Mussiab Power Plant, Iraq

SWES

Lead electrical engineer on a 500 MW simple cycle power generation facility utilizing ten GE LM6000 combustion turbines. Work included electrical distribution and control integration of five individual power islands, refinery, water treatment, oil tank farm and a 400kV switchyard.

Hines Energy Comple Power Bloc 2, FL

Progress Energy

Provided electrical construction support to the EPC contractor, Gemma Power Systems in Florida as well as engineering supervision to Parsons E&C, Reading, PA on a 516 MW combined cycle power plant expansion.

Dighton Power Associates, MA

Energy Management, Inc.

EPC contractor's on-site lead electrical engineer and start up engineer for a 170 MW combined cycle facility, the first merchant power generation facility in New England. Facility was based on an ABB single shaft GT-11N2 power train.

Brooklyn Navy Yard, NY

Brooklyn Navy Yard Cogeneration Partners

EPC contractor's on-site electrical engineer and start up engineer for a 286 MW combined cycle facility. Facility based on Siemens' V84.2 gas turbines with twin Siemens condensing-extraction steam turbines.



Supervising Electrical Engineer

B.S. Industrial Technology

On-site Support

Start-up and commissioning

Senior Civil/Structural Engineer

Mr. Laffey is a senior structural engineer at Mott MacDonald, with thirty two years of experience in the engineering and design of complex foundation and building systems associated with major power and industrial projects.

2001 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)
Senior Civil/Structural Engineer

2000-2001 Vanderweil Engineers Team Leader - Civil/Structural Engineer

1982-2000 Chas T Main Parsons Senior Structural Engineer

1977-1982 United Engineers Constructors Structural Engineer

Sentinel Energy Project, US

Gemma Power Systems

Lead civil/structural engineer for the detail design of a new, eight unit, natural gas fired, 850 MW simple cycle facility, located in Riverside County, California. The site is approximately 37 acres and consists of the eight GE LMS100 combustion turbine generators, cooling towers, tanks, ammonia unloading, compressors, and an administration building. The site is located within an active seismic area, with the closest fault, the San Andreas Fault, located 0.25 miles from the site.

Takoradi T3, Ghana

SWES

Lead structural engineer for the detail design of a new natural gas fired 150 MW combined cycle plant addition, located in Ghana, Africa. The project consists of four combustion turbines plus one 40 MW condensing steam turbine, as well as condensers, tanks, pipe racks, and ancillary equipment.

Brayton Point Station, US

Dominion Energy New England

Owners engineer responsible for the review of the concrete encased closed salt water cooling system and the reinforced concrete hyperbolic cooling towers for the upgrade on an existing coal fired 1530 MW power plant, in Somerset, Massachusetts, USA. Additional work included preparation of scope of work documents for a new fuel

gas scrubber system and miscellaneous plant upgrades.

Cos Cob Project, US

NRG Energy

Lead structural engineer for the design of the foundations for the Cos Cob facility upgrade and expansion. The work included the design of two Pratt & Whitney turbine foundations, the design of the foundations for two new control modules and two relocated control modules, a new transformer foundation, and new bus supports and foundations, all within a very congested site.

Millennium Power Partners

Winterization Project, US

Millennium Power Partners

Lead structural engineer responsible for the design of new weather enclosures around the outdoor HRSG at an operating 350 MW power plant. The work was conducted in two phases, to permit winter operations. The Owner required that the facility remain operational during the construction, with minimal interruptions. The new enclosures were designed to fit in and around the existing piping and equipment, negating the need to modify any of the existing systems.

Wildflower Energy, US

Gemma

Lead structural engineer for fast-track peaker project in California that consisted of five LM-6000s and were permitted under the Emergency Peaker Permitting provisions enacted by Governor Gray Davis of California. Notice-to-proceed was given in February 2001; commercial operation was July 2001

SPA Cogeneration Project, US

SMUD

Lead civil/structural/architectural engineer for the design of a 160 MW Cogeneration facility. The structural design included foundations for major equipment including turbines, boilers, cooling tower basin, and tanks. The facility was designed in accordance with UBC seismic Zone 3 requirements. The project was designed and constructed on a fast track basis



Senior Civil/Structural Engineer

B.S. Civil Engineering

Registered Professional Engineer: MA

Foundation Design

Steel Design

Structural Analysis

Retrofit of existing structures

Chief Civil/Structural Engineer

Chief Civil/Structural Engineer Mott MacDonald T&D North America with over 30 years of experience in the electrical utility and consulting/engineering industry specializing in power delivery systems including generation, transmission, distribution and substation installations.

200 present Mott MacDonald LLC

(Member firm of Mott MacDonald Group)
Chief Civil/Structural Engineer

1987-200 NSTAR Electric
Civil/Structural Lead Engineer

1981-1987 Chas T. Main Parsons
Senior Structural Engineer

1975-1981 Boston Edison Co.
Senior Engineer

Erbil Combined Cycle Conversion, Iraq
Mass Global Investments
Owner's Engineer for the conversion of an existing 8-unit simple cycle gas turbine plant to combined cycle plant with the addition of heat recovery boilers and steam turbine generators.

A - our South Power Station, uwait
Ministry of Electricity and Water
Lead Engineer for the civil, structural and architectural design for a 2400 MW power station.

Ivanpah Solar Electric Project, CA
Klondyke Construction
Project Manager for the design portion of an EPC contract for the high voltage transmission connection of a 400MW thermal solar power facility in the Mojave Desert. 115kV transmission connection consisted of 3 miles of underground direct buried XLPE cable and 2 miles of overhead construction, connecting to new Southern California Edison switchyard.

Wethersfield Wind Par , NY
Noble Environmental Power
Project Engineer responsible for the civil/structural design of the 230KV transmission line and switchyard connecting the wind park to the transmission grid. Design of the line utilizing PLS-CADD and PLS-POLE software. Provided design documentation and technical support for NY State Article VII permit application and the follow-up Environmental Management & Construction Plan.

Designed foundations for the 230kV switchyard and managed the civil site work design. Provided periodic on-site inspection and support during construction.

Bliss Wind Par , NY

Noble Environmental Power
Project Engineer responsible for the final civil/structural design of the 115kV transmission line connecting the wind park to the transmission grid. Design of the line utilizing PLS-CADD and PLS-POLE software.

Microwave Communications System, NY

Noble Environmental Power
Project Engineer responsible for the EPC performance specifications and bid documents for additions and upgrades to the NYPA microwave communications system required as part of the Clinton, Ellenburg and Altona Wind Park interconnections. Scope included a new 195 ft tall self-supporting lattice tower, a new 275 ft guyed tower, and a new 90 ft monopole tower at separate sites with associated antennas and shelters for the communication equipment and back-up power supplies.

endall Substation Cambridge, MA *NSTAR Electric*

Project Engineer for the construction of a new 150MVA 115kV substation. Substation located on a brownfield site in a dense commercial business area. Location and limited space required innovative, aesthetic, compact indoor GIS substation design.

Colburn St Substation, MA *NSTAR Electric*

Project Engineer for the construction of a new 200 MVA 115kV substation and tap to an existing underground pipe-type cable transmission line. Responsible for the civil/structural design of the substation and for preparation of contract documents for the substation, transmission and distribution construction.

ASCE Stephen D Bechtel Jr. Energy Award 1998 for the publication "The Structural Design of Air and Gas Ducts for Power Stations and Industrial Boiler Applications".



Chief Civil/Structural Engineer

BS Civil Engineering, Northeastern University

Registered Professional Engineer – MA

Proficient in use of computer aided design tools including PLS-CADD, PLS-POLE, STAAD.Pro, and EnerCalc. Thorough knowledge of design codes and standards including International Building Code (IBC), National Electric Safety Code (NESC), American Society of Civil Engineers (ASCE), American Concrete Institute (ACI), and American Institute of Steel Construction (AISC).

Member American Society of Civil Engineers

Registered Professional Engineer – MA

Member Structural Engineering Institute

Altona Wind Energy Project

The Altona Wind Energy Facility was a nominal 100 MW wind farm located in the Town of Altona, New York (west of Plattsburg, NY). The project included detailed engineering and design related to a 230/34.5kV substation and the wind turbine 34.5kV collector system including the fiber optic cable system for turbine operation and control. The project had sixty-seven (67) GE 1.5MW wind generators installed.

The engineering and design responsibility for the 230/34.5kV substation included serving as the Owner's Engineer responsible for developing the conceptual design as well as the detailed engineering and design including specifications for material procurement, construction specifications, vendor and design drawing reviews and engineering support during construction. The work also consisted of the preparation of revised schematics and wiring drawings as well as on-site wiring, testing and commissioning activities.

The detailed design of the 34.5 kV collector and fiber optic systems included both overhead and underground installations. The underground system consisted of direct buried TRXLPE cables terminated in dead-front junction boxes and/or pad mounted step-up transformers. Junction boxes were utilized to reduce the number of splices required and provide convenient points of isolation. A separate bare copper ground wire was installed to ensure a continuous path for ground current.



The fiber optic cables were installed in the same trench as the power cables. All the cables were directly embedded via trenching equipment as well as open excavation. Road crossings were accomplished using boring and jacking techniques.

Due to the requirement for multiple circuits per pole the overhead system was designed for spacer cable installed on wood poles. NESC heavy loading criteria were utilized and the requirement for 1-1/2" ice was incorporated into the design based upon the local weather conditions.

Bliss Wind Energy Project

100MW Engineering and Design

The Bliss Wind Energy Facility was a nominal 100MW wind farm located in upstate Wyoming County, near Buffalo, New York. The project included engineering and design related to a 115/34.5kV substation, a 115kV transmission line, and the wind turbine 34.5kV collector system including the fiber optic cable system for turbine operation and control. The project had sixty-six (66) GE 1.5 MW wind generators installed.

As the Owner's Engineer for the 115/34.5kV Substation, the work involved the development of conceptual drawings, preparation of specifications for procurement and installation, bid analysis, drawing review and approval and engineering support during construction.

The detailed design of the 5.5 mile long 115kV overhead transmission was included in the project. The line was designed for and installed on laminated wood structures to eliminate guying throughout the ROW and to minimize the impact on local agriculture.

Also provided were detailed bills of material, procurement assistance, construction specifications and technical support during the construction.

The detailed design of the 34.5 kV collector and fiber optic systems included both overhead and underground installations. The underground system consisted of direct buried TRXLPE cables terminated in dead-front junction boxes and or pad mounted step-up transformers. Junction boxes were utilized to minimize the number of splices required and provide convenient points of isolation. A separate bare copper ground wire was installed to ensure a continuous path for ground current.



The fiber optic cables were installed in the same trench as the power cables. All the cables were directly embedded via trenching equipment as well as open excavation. Road crossings were accomplished using boring and jacking techniques.

Due to the requirement for multiple circuits per pole the overhead system was designed for spacer cable installed on wood poles. NESC heavy loading criteria were utilized and the requirement for 1-1/2" ice was incorporated into the design based upon the local weather conditions.

Bliss Wind Energy Project 115kV Transmission Line

The Bliss Wind Energy Project is a nominal 72MW wind farm located in Bliss New York. The generation output from the wind park is via a 115kV transmission line between the wind park Substation and the nearby switchyard. The transmission line is approximately 5.5 miles running through primarily agricultural and wooded land. The conductors are 477 kcmil ACSR (Hawk) with 26/7 stranding. A single OPGW wire was installed above the conductors to provide shielding, relaying and protection, and SCADA communications.

The support structures for the line are single laminated wood poles with davit arm construction. The circuit wires are mounted vertically on one side of the poles and davit arms were provided on the other side for a future second circuit. Angle structures are single self supporting laminated wood poles.

Self supporting poles were selected over guyed structures because of objections raised by many of the farmers that the presence of guy wires would hinder their agricultural operations. Laminated wood was selected over steel for aesthetic considerations.

Mott MacDonald performed the detailed design utilizing PLS_CADD transmission line software. Complete plan and profile drawings and specifications were produced for construction of the line. Specifications and Bill of Materials were produced for procurement of all the materials. Mott MacDonald provided engineering support during construction and commissioning of the line.



System Reliability Impact Study – Upton Solar Farms

Mott Macdonald has conducted a System Reliability Impact Study (SRIS) for NYISO/LIPA to evaluate the impact of the proposed solar farm on the reliability of the New York State Transmission System. The system impact study included the following analysis: power flow, contingency, transfer limit, transient stability, short circuit and an estimation of interconnection costs. The Project has a maximum potential generating capacity of 32MW.

The system analysis was performed using PSS®E developed by Siemens PTI (Version 31.2 for the steady state analysis and Version 30.3 for the dynamic analysis) and ASPEN Batch Short Circuit v10. The power flow, short circuit and dynamic models utilized were provided by NYISO and reviewed by Mott MacDonald and LIPA.

Mott MacDonald objectives were to:

- Confirm the new facilities comply with applicable reliability standards.
- Assess the impact of the project on the reliability of the existing system.
- Evaluate alternatives to eliminate adverse reliability impacts, if any, resulting from the proposed interconnection.



Photo courtesy of Brookhaven National Laboratory and BP Solar

Chateaugay Wind Energy Project

The Chateaugay Wind Energy Facility was a nominal 107 MW wind farm located in the Town of Chateaugay, New York (west of Plattsburg, NY). The project included detailed engineering and design related to a 230/34.5kV substation and the wind turbine 34.5kV collector system including the fiber optic cable system for turbine operation and control. The project had seventy-one (71) GE 1.5 MW wind generators installed.

The engineering and design responsibility for the 230/34.5kV ring bus substation included serving as the Owner's Engineer responsible for developing the conceptual design as well as the detailed engineering and design including specifications for material procurement, construction specifications, vendor and design drawing reviews and engineering support during construction. The work also consisted of the preparation of revised schematics and wiring drawings as well as on-site wiring, testing and commissioning activities.

The detailed design of the 34.5kV collector and fiber optic systems included both overhead and underground installations. The underground system consisted of direct buried TRXLPE cables terminated in dead-front junction boxes and/or pad mounted step-up transformers. Junction boxes were utilized to reduce the number of splices required and provide convenient points of isolation. A separate bare copper ground wire was installed to ensure a continuous path for ground current.



The fiber optic cables were installed in the same trench as the power cables. All the cables were directly embedded via trenching equipment as well as open excavation. Road crossings were accomplished using boring and jacking techniques.

Due to the requirement for multiple circuits per pole the overhead system was designed for spacer cable installed on wood poles. NESC heavy loading criteria were utilized and the requirement for 1-1/2" ice was incorporated into the design based upon the local weather conditions.

Clinton Wind Energy Project

The Clinton Wind Energy Facility was a nominal 100 MW wind farm located in the Town of Clinton, New York (west of Plattsburg, NY). The project included engineering and design related to a 230/34.5kV substation and the wind turbine 34.5kV collector system including the fiber optic cable system for turbine operation and control. The project had sixty-seven (67) GE 1.5MW wind generators installed.

The engineering and design responsibility for the 230/34.5kV ring bus substation during Phase 1 of the project included serving as the Owner's Engineer developing the conceptual design, specifications for material procurement, construction specifications, vendor and design drawing reviews and engineering support during construction. During Phase 2 of the Project the work consisted of the preparation of revised schematics and wiring drawings as well as on-site wiring, testing and commissioning activities.

The detailed design of the 34.5 kV collector and fiber optic systems included both overhead and underground installations. The underground system consisted of direct buried TRXLPE cables terminated in dead-front junction boxes and/or pad mounted step-up transformers. Junction boxes were utilized to reduce the number of splices required and provide convenient points of isolation. A separate bare copper ground wire was installed to ensure a continuous path for ground current.



The fiber optic cables were installed in the same trench as the power cables. All the cables were directly embedded via trenching equipment as well as open excavation. Road crossings were accomplished using boring and jacking techniques.

Due to the requirement for multiple circuits per pole the overhead system was designed for spacer cable installed on wood poles. NESC heavy loading criteria were utilized and the requirement for 1-1/2" ice was incorporated into the design based.

Competitive Power Ventures

Multiple Simple and Combined Cycle Projects

CPV Valley – Mott MacDonald is providing development and permitting support for a 2x1 combined cycle power plant based on F class technology in New York. Mott MacDonald provided design of a 345 kV remote GIS substation and one mile of underground 345 kV cable to support plant interconnection and developed separate EPC Minimum Design Criteria for the power plant, 345 kV cable and GIS substation to support EPC Bid process.

Mott MacDonald is providing engineering and design during project development for multiple simple and combined cycle projects. The simple cycle plants are generally dual fuel and multiple combustion turbines are being investigated for use on these projects. The combined cycle plants are generally based on F Class technology.

Mott MacDonald is interfacing with the client and environmental consultant to provide engineering support throughout the development of these projects. Mott MacDonald is evaluating potential CTG configurations and is providing input to the permitting documents as the development proceeds. Deliverables include multiple heat balances, water balances, wastewater analysis, water treatment design, site plans, general arrangements, one line diagrams, switchyard arrangements, environmental impacts, preliminary site grading and drainage plans and technical / project descriptions.

Mott MacDonald is also interfacing with the interconnecting Utility for each project on all aspects of the electrical interconnection including design and coordination issues, response to Utility feasibility studies, cost estimates and preparation of all required applications and their technical support documents to be filed with the Utility.



Duley Substation Wind Farm Interconnection Project

The Duley Substation is a nominal 230kV/34.5kV substation located in Altona County, upstate New York. The 230kV portion of the substation is a three breaker ring bus that segments one of NYPA's EHV transmission lines. The 34.5kV portion serves as the interconnecting point for the Altona 97.5MW wind farm. The 34.5kV substation is tied to the 230kV substation via a three phase power transformer.

The project included engineering and detailed design related to both the 230kV and 34.5 kV portions of the substation. There was also some engineering associated with the interface to the 230kV transmission system. This involved the design of several tap structures and coordination with utility (NYPA).

Other tasks included the generation of detailed specifications for material procurement and construction. Some of the major items included power circuit breakers, line traps, disconnect switches, Capacitor Coupled Voltage Transformer (CCVT), power transformer, station service transformers, and combination metering units. These specifications were then sent out to bid and reviewed and the appropriate recommendations were then made to the client.

During the design phases of the project, extensive interface and coordination with interconnecting utility (NYPA) was required. As the construction phase began, significant field engineering support during was required to complete this project in a timely manner, and to provide the client and the utility with the necessary documentation to close out the project.



Ellenburg Wind Energy Project

The Ellenburg Wind Energy Facility was a nominal 81 MW wind farm located in the Towns of Ellenburg and Clinton, New York (west of Plattsburg, NY). The project included engineering and design related to a 230/34.5 kV substation and the wind turbine 34.5 kV collector system including the fiber optic cable system for turbine operation and control. The project had fifty-four (54) GE 1.5 MW wind generators installed.

The engineering and design responsibility for the 230/34.5 kV ring bus substation during Phase 1 of the project included serving as the Owner's Engineer developing the conceptual design, specifications for material procurement, construction specifications, vendor and design drawing reviews and engineering support during construction. During Phase 2 of the Project the work consisted of the preparation of revised schematics and wiring drawings as well as on-site wiring, testing and commissioning activities.

The detailed design of the 34.5 kV collector and fiber optic systems included both overhead and underground installations. The underground system consisted of direct buried TRXLPE cables terminated in dead-front junction boxes and/or pad mounted step-up transformers. Junction boxes were utilized to reduce the number of splices required and provide convenient points of isolation. A separate bare copper ground wire was installed to ensure a continuous path for ground current.



The fiber optic cables were installed in the same trench as the power cables. All the cables were directly embedded via trenching equipment as well as open excavation. Road crossings were accomplished using boring and jacking techniques.

Due to the requirement for multiple circuits per pole the overhead system was designed for spacer cable installed on wood poles. NESC heavy loading criteria were utilized and the requirement for 1-1/2" ice was incorporated into the design based upon the local weather conditions.

NYISO Facility Studies

Mott Macdonald was retained by NYISO to provide engineering support on as needed basis. The assignment included the preparation of Part 1 of the Facility Study for two projects (Stephentown 20 MW and Stony Creek 88.5 MW) from the Class Year 2010 for interconnect applications submitted to NYISO. Mott MacDonald managed the work on behalf of NYISO, and coordinated the work with the developer the affected transmission line Owners, including, NYPA, NYSEG and NGRID.

Mott MacDonald prepared the work scope definition, the One-line Diagrams, Relay One-Line Diagrams, Power Line Carrier Frequency Assessment, Site Plan and General Arrangement layouts, construction schedule, and cost estimates. The Interconnection Construction Cost estimate was initially generated by Mott MacDonald based on equipment pricing, construction unit price cost based on recent historical cost and our own data base. Every other party also generated its own cost and after several round of discussions all parties agreed on the scope, the schedule and the final cost that was included in the facility study.

Upon award, we mobilized the designated project team members and met with them to review scope and objectives. The team participated in a kick-off meeting (conference call) among us, NYISO, the developer and the affected utility. NYISO established the schedule for the projects and conveyed this information at this time. We became the interface between the utility (NYSEG for both projects) and the developers (Beacon Power for Stephantown and Invenergy for Stony Creek). We were given a simple One-Line Diagram and the System Impact Study from NYISO at the start of the Project. A comprehensive deliverables schedule was prepared by the Project Team based on direction from NYISO and man hours were allocated to each deliverable.



NRG Super Peaker Project

Mott MacDonald provided conceptual engineering and design in support of the development of the cycle configuration and equipment selection for a 575 MW fast start combined cycle peaking facility. Once the cycle configuration was defined, Mott MacDonald prepared a capital cost estimate for the facility and generated a Minimum Design Criteria document to support an EPC RFP for the project.

The plant consisted of a 2 x1 "F" technology combined cycle power island designed for reduced start-up durations. The plant utilized Benson style waste heat recovery boilers with duct firing and Heller cooling system technology with a direct contact condenser. Services included development of switchyard design and interface with Utility. MM developed preliminary site plans, general arrangements, P&IDs and one-line diagrams to support cost estimates.

Mott MacDonald interfaced with the client, OEM, Utility, and others to develop the full range of operating parameters to be satisfied by the plant.

Mott MacDonald performed engineering services including:

- Heat and material balances,
- Water Balances,
- Water treatment studies,
- Condensing studies
- General and Site arrangements,
- Plant P&IDs,
- Grading plans,
- Electrical Single Line Diagrams,
- Switchyard arrangements,
- Development of Minimum Design Criteria

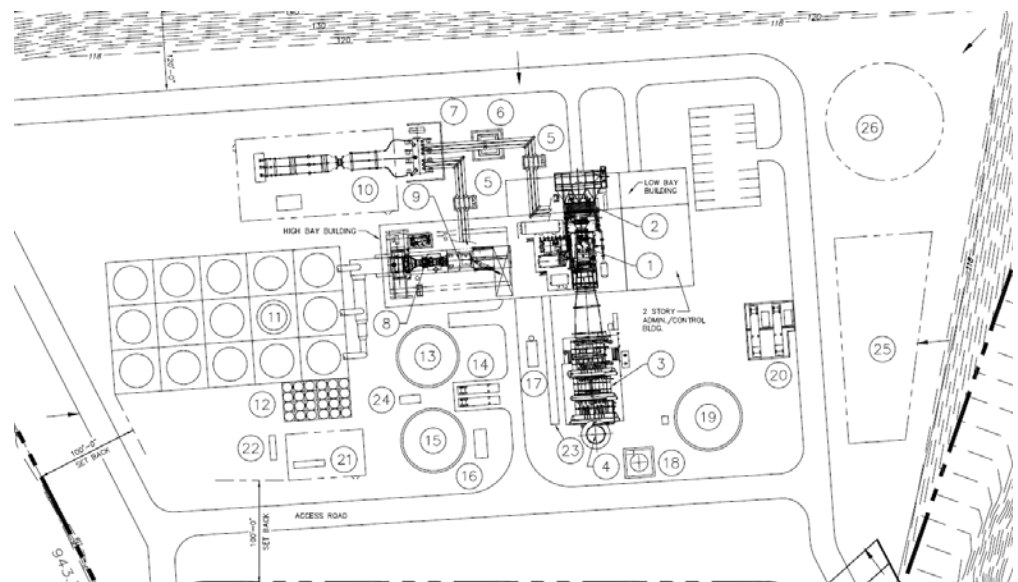
Pure Energy Resources LIPA Combined Cycle Project

Mott MacDonald developed an EPC capital cost estimate and supported equipment selection for the Client in response to an RFP issued by the Long Island Power Authority (LIPA). To support project development Mott MacDonald provided engineering and design for a variety of site configurations based on use of a G technology Combustion Turbine.

This project in combined cycle configuration also included the preliminary engineering and scoping documents to support the installation of underground 138 KV oil filled dielectric cables to an existing substation near the proposed facility. This routing was over 6 miles long through a densely populated area.

Mott MacDonald worked directly with the client and other subs such as the environmental consultant, to provide engineering support throughout the estimating and development of this project.

Deliverables included balance of plant equipment sizing, water balances, heat balances, wastewater analysis, water treatment design, site plans, general arrangements, one line diagrams, switchyard arrangements, preliminary site grading and drainage plans and technical / project descriptions.



Ryan Substation Interconnection

The Ryan Substation is a nominal 230kV/34.5kV substation located in upstate Clinton County, New York. The 230kV portion of the substation is a five breaker ring bus that segments one of NYPA's 230kV transmission lines. The 34.5kV portion serves as the interconnecting point for three wind farms (Clinton, Ellenberg and Chateaugay) totaling 300MW. The project included engineering and detailed design related to both the 230kV and 34.5 kV portions of the substation.

The engineering work associated with the 230kV/34.5kV substation covered multiple disciplines. The detailed design work included the preparation of several drawings and documents for this project including structural design and calculations, physical design, relay protection schemes, elementary diagrams, point to point wiring diagrams, interface to NYPA's 230kV transmission system, grounding design and calculations, lightning protection study, and the design of the SCADA system.

Other tasks included the generation of detailed specifications for material procurement and construction, review of vendor drawings, interface and coordination with interconnecting utility (NYPA), office and field engineering support during construction, and record drawings.



Wethersfield Wind 126MW Project Profile

The Wethersfield Wind Energy Facility was a nominal 126 MW wind farm located in upstate Wyoming County, near Buffalo, New York. The project included engineering and design related to a 230 kV Switchyard, 230/34.5 kV substation, a five and one half mile long 230 kV transmission line, the wind turbine 34.5 kV overhead and underground collector system including the fiber optic cable system for turbine operation and control. The project has eighty-four (84) GE 1.5 MW wind generators installed.

The engineering work associated with the 230 kV Switchyard included the preparation of conceptual drawings, detailed design and engineering drawings, relay protection and control schemes, SCADA, detailed specifications for material procurement and construction, review of vendor drawings, interface with interconnecting utility (NYSEG), office and field engineering support during construction, and as-built drawings.

As the Owner's engineer for the 230/34.5 kV substation, the engineering and design services included conceptual design drawings, detailed specifications for material procurement and construction, review of vendor and engineering design drawings and engineering support during construction.

The detailed design of the 5.5 mile long 230 kV overhead transmission was included in the project. Due the voltage of the line, an Article VII Application was required by the State of New York. We provided the technical support for the Application as well as the subsequent Environmental Construction and Management Plan (EM&CP).



Wethersfield Wind Energy Project

The Wethersfield Wind Energy Facility was a nominal 126MW wind farm located in upstate Wyoming County, near Buffalo, New York. The project included engineering and design related to the wind plant, a utility interconnection substation, a 230/34.5kV collector substation and 56 miles of collector cables. The project consists of eighty-four (84) GE 1.5 MW wind turbines.

We were engaged as the Owner Engineer during the development phase and continued as the Design Engineer through construction and commissioning.

We assisted the client and the Environmental Consultant in preparing drawings and document for the plant Siting and Permitting process that encompassed the DEIS, final EIS several dozen local laws and ordinances, state and federal permits.

We also took the lead in preparing an Article VII Application for the 6 mile overhead transmission line and participated in discussions with the State of New York DPS. As a follow up to Article VII. We participated in the preparation of the subsequent Environmental Construction and Management Plan (EM&CP).



Wind Energy Development Support New York State Projects

The Wethersfield Wind Energy Facility, one of five total projects, was a nominal 126 MW wind farm located in upstate Wyoming County, near Buffalo, New York. The project included engineering and design related to the wind plant, a utility interconnection substation, a 230/34.5 kV collector substation and 56 miles of collector cables. The project consists of eighty-four (84) GE 1.5 MW wind turbines.

We were engaged as the Owner Engineer during the development phase and continued as the Design Engineer through construction and commissioning.

We assisted the client and the Environmental Consultant in preparing drawings and document for the plant Siting and Permitting process that encompassed the DEIS, final EIS several dozen local laws and ordinances, state and federal permits.

We also took the lead in preparing an Article VII Application for the 6 mile overhead transmission line and participated in discussions with the State of New York DPS. As a follow up to Article VII. We participated in the preparation of the subsequent Environmental Construction and Management Plan (EM&CP).



Similar development support was provided for:

- Clinton Wind Energy Facility - 100 MW wind farm located in the town of Clinton, New York
- Bliss Wind Energy Facility - a nominal 72MW wind farm located in Bliss, New York
- Chateaugay Wind Energy Facility - a nominal 107 MW wind farm located in the town of Chateaugay, New York
- Altona Wind Energy Facility - a nominal 100 MW wind farm located in the town of Altona, New York



Con Ed Vernon Substation

Mott MacDonald provided detailed engineering and design services for the replacement of a 138 kV breaker in Con Ed's Vernon substation. The project included a unique design challenge that highlights Mott MacDonald's innovative approaches and depth of experience. The existing substation was being upgraded to support the addition of a new 250 MW power generation facility. The new interconnection equipment would limit maintenance access to the ring bus. Mott MacDonald's design team conceived an effective solution and executed the design of an innovative platform for the new breaker to allow truck access to the inner portions of the ring bus.

Mott MacDonald's electrical engineers prepared equipment arrangement drawings, single line diagrams, and specifications for the new 138 kV breaker. The electrical team also designed the relaying, metering, and controls. For the innovative platform location, the team analyzed all clearance, grounding, and access issues associated with the platform.

Mott MacDonald's structural engineering team designed the foundations and platform based on the structural and high voltage constraints. The platform design included two sets of access stairs for safe maintenance access.



CPV Sentinel Energy Project 800 MW Simple Cycle Project

Mott MacDonald provided the complete engineering and design for this 800 MW simple cycle project located in Palm Desert, California. Mott MacDonald executed the design as a subcontractor to the project EPC contractor, Gemma Power Systems. The project owner is Competitive Power Ventures, Inc.

The project included eight natural gas fired General Electric LMS100 gas turbines, in a simple cycle arrangement and a 12 breaker 230kV switchyard and interconnection coordination with Southern California Edison.

Mott MacDonald's scope included civil, structural, mechanical, electrical, instrumentation and controls, relay protection and complete switchyard and interconnect engineering and design. Mott MacDonald also prepared specifications and evaluations of the technical portions of bids to support Gemma's procurement efforts and is currently providing highly skilled field engineers to support Gemma's construction and start up program.

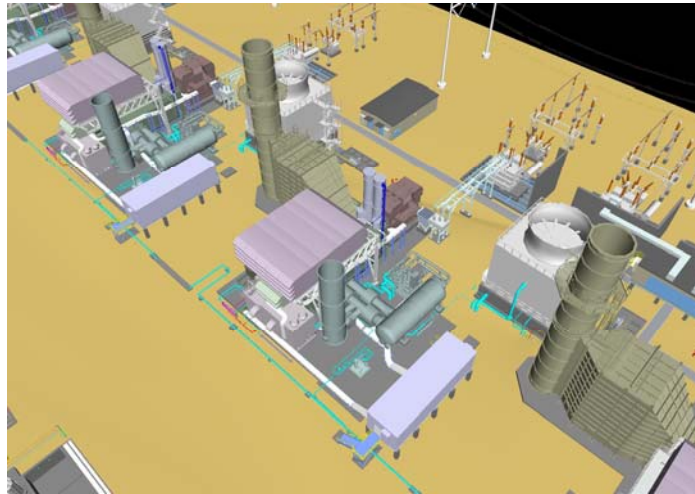
The project includes eight natural gas fired General Electric LMS100 gas turbines with inlet evaporative cooling, exhaust system with SCR and CO catalysts, six gas compressors, water storage tanks, water treatment system, zero discharge waste water system, administration/warehouse building and a 230 kV switchyard.



Mott MacDonald's civil and structural team engineered and designed the site layout, all equipment foundations, structural steel, and site drainage design. Mott MacDonald also prepared the SWPPP, and provided all coordination with the Chief Building Official (CBO) and onsite support during the construction phase.

Mott MacDonald's mechanical engineering team prepared general arrangement drawings, P&IDs, piping drawings, and equipment specifications. The major mechanical systems include the gas turbines with evaporative cooling, exhaust housing with SCR and CO catalysts, gas compressors, zero discharge waste water system, fire protection, and a demineralized water system. The design was generated with Mott MacDonald's 3D design package.

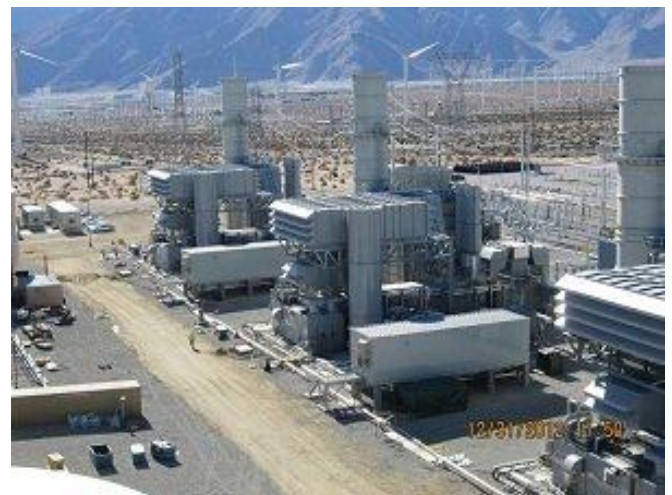




Mott MacDonald's electrical engineering team designed the plant electrical and controls systems, the step-up transformers (18kV to 230kV), 230kV switchyard, protective relaying, metering, and fiber optic communications system. Mott MacDonald provided the complete design of the station service transformer and 4kV, 480V and 120V balance of plant systems. The plant is interconnected to the Southern California Edison (SCE) system through a new 230kV transmission line and interfaces with Cal ISO.

Mott MacDonald's controls engineers implemented a PLC based control system to integrate the gas turbines' GE control system, the switchyard remote terminal unit (RTU), and several balance of plant PLC control systems. The integrated system allows operators to control the plant from a central control room. The fiber optic communications system is designed to provide real time information to the Owner's power marketers, as well as metering and control information to the interconnecting utility.

The project design began in February 2011 and substantial completion is scheduled to be achieved in August 2013



Takoradi T3 Project 150 MW Combined Cycle

Mott MacDonald provided the complete engineering and design for this 150 MW combined cycle project located in Ghana, Africa. Mott MacDonald executed the project as a subcontractor to the project EPC contractor, S&W Energy Solutions.

Mott MacDonald's scope included civil, structural, mechanical, electrical, instrumentation and controls, engineering and design. Mott MacDonald also prepared specifications and evaluated the technical portions of bids to support SWES' procurement efforts on an as requested basis.

The project includes four dual fuel fired 25 MW combustion turbines, four once-through heat recovery steam generator and a single 50 MW steam turbine. The plant also includes inlet air chilling for the CTGs, a fuel gas control station, light crude oil and distillate fuel systems, water storage tanks, water treatment system, cooling tower, administration/warehouse building and a 160kV switchyard.

Mott MacDonald's civil and structural team engineered and designed the site layout, all equipment foundations, structural steel, pipe rack, and site drainage design. We also prepared specifications for the pre-engineered buildings.

Mott MacDonald's mechanical engineering team prepared general arrangement drawings, P&IDs, piping drawings, and equipment specifications. The major mechanical systems include the gas turbines with inlet chillers, HRSG's, STG, water treatment system, cooling towers, fire protection, and condensate polishing. The design was generated with Mott MacDonald's 3D design package.



Mott MacDonald's electrical engineering team designed the plant electrical and controls systems, the step-up transformers, interfacing with the 160 kV switchyard, protective relaying, metering, and fiber optic communications system. The plant is interconnected to the Volta River Authority/Trans Grid system through a new 160 kV transmission lines.

The project design began in 2010 and substantial completion is scheduled to be achieved in early 2013.

Erbil Power Plant Owner's Engineer

Mott MacDonald was awarded the Owner's Engineer assignment for the Conversion of the Simple Cycle Erbil Power Plant to Combined Cycle in October 2010 by Mass Global Investment Company (MGI) presently located in Amman, Jordan.

The Erbil plant is located in the province of Erbil, Kurdistan, Iraq and consists of eight (8) GE 9E gas turbines operating in simple cycle and exporting power to the grid at 132kV. Mott MacDonald provided all conceptual engineering and design for the conversion to combined cycle operation and prepared all bid documents to solicit proposals on an EPC basis from qualified EPC Contractors.

The combined cycle configuration will have two power blocks, each consisting of four gas turbines/HRSGs feeding one condensing Steam Turbine Generator. Power will be supplied to two new 400kV transmission lines being installed by the Iraqi Ministry of Electricity. The combined cycle plant will produce a nominal 1500MW when operational.

The EPC contract was signed in April 2012 with the Turkish contractor ENKA Construction, located in Istanbul. Commercial operation of both blocks is scheduled for January 2015.

This Project will supply much needed power to many provinces in southern Iraq, not just the northern province of Kurdistan.



Calpine Garrison Energy Center Project

Mott MacDonald assisted in site development and the vetting of an EPC capital cost estimate as well as supported equipment selection for the Garrison Energy Center in Dover Delaware.

The facility consists of two “F” technology combustion turbines in combined cycle with mechanical draft cooling towers and full Balance of Plant (BOP) services.

To support project development Mott MacDonald provided engineering and design for a variety of site configurations based on use of “F” technology Combustion Turbines.

Mott MacDonald worked directly with the client and other subcontractors such to provide engineering support throughout the estimating and development of this project.

Deliverables included

- Balance of plant equipment sizing,
- Capital cost estimating support,
- Water balances,
- Wastewater analysis & treatment,
- Water treatment design,
- Site plans,
- 3D renderings and view sheds,
- General arrangements,
- One line diagrams,
- Switchyard arrangements,
- Preliminary site grading and drainage plans.



Intergen Pondera Project

Mott MacDonald provided engineering and design during project development and permitting for a combined cycle power station in the Houston area.

The plant consisted of 4 independently dispatchable “F” technology power islands with mechanical draft cooling towers. Balance of plant services included water pre-treatment (clarifiers) demineralizers and waste water treatment. The plant also included auxiliary boilers and fuel gas compressors.

Mott MacDonald interfaced with the client, OEM, environmental consultant, and others to develop the full range of operating emissions parameters for either GE or SWPC engine selections.

Mott MacDonald performed engineering services including:

- Heat and material balances,
- Water Balances,
- Condensing studies
- General and Site arrangements,
- Storm water plans,
- Grading plans,
- Electrical Single Line Diagrams,
- Switchyard arrangements



Longview Power

700MW PC Fired Power Plant

Longview Power is a pulverized coal fired supercritical power project developed by GenPower. The 700MW plant is located near Morgantown, West Virginia, and was interconnected with the Allegheny Power's 500kV transmission system.

The plant design includes a supercritical boiler firing 2.5% sulfur bituminous coal, condensing steam turbine generator, and mechanical draft cooling tower. Coal is supplied by an existing mine several miles from the power plant with coal delivered by conveyor belt. Makeup water for the cooling tower is supplied by water beneficially reclaimed from abandoned mine pools in the area. The boiler is equipped with state-of-the-art pollution control equipment including a selective catalytic reduction system (NOx), dry sorbent injection (HCl and HF), baghouse, TMT-15 (Hg) and DBA (SO2) injection, and a wet flue gas desulfurization system (SO2).

Mott MacDonald is providing Owner's Engineering services currently and provided conceptual engineering and design, permitting support, electrical interconnection support, EPC bid document preparation, and bid evaluations.

Mott MacDonald began its involvement with the project by performing a phased technical feasibility analysis beginning with site plan development to locate the major components on the site, and general arrangements for the boiler, turbine, switchyard and fuel handling areas. Mott MacDonald conducted a boiler and turbine technology review and obtained performance and emissions parameters from suppliers. Mott MacDonald worked with an environmental consultant in support of air modeling and other permitting activities.



This project utilizes Acid Mine Drainage (AMD) as the water source for the cooling tower makeup. AMD water has been treated and used in other industrial applications. However, at this time no other power plant has utilized this as their primary water source. The application of AMD reduces impact on local waterways, streams, and recreational areas. Most of the water will be evaporated in the cooling tower, what little AMD remains will be used to facilitate pollution control equipment such as the wet flue gas desulfurization system. Additionally, the AMD water will be used for dust suppression around the facility.

For the electrical interconnection with Allegheny Power, Mott MacDonald developed a preliminary design including one line diagrams and a general arrangement for the 500kV switchyard. Mott MacDonald prepared the application data for the PJM interconnection study and worked with Allegheny/PJM to identify the specific interconnection requirements including metering, protective relaying and communications.



Once the conceptual design was complete, Mott MacDonald prepared bid specifications for the turnkey supply of the engineering, procurement, and construction (EPC) for the project. Mott MacDonald developed the technical design basis for the EPC contract for all plant systems including civil, structural, mechanical, environmental, material handling, electrical, and controls, as well as the project execution criteria, and performance and emission requirements.

The EPC Contractor for the power plant was a consortium between Siemens Power and Aker Construction, Inc. The boiler was supplied by Foster Wheeler North America. Mott MacDonald was extensively involved with the Owner and the EPC Consortium as regards review of design documents as well as design review sessions concerning all aspects of the Project.

The EPC Contractor for the 500kV Switchyard was Beta Engineering and Mott MacDonald provided design review services during the execution of that EPC Contract as well.

Mott MacDonald's role included ensuring that the project's performance goals and environmental requirements would be met with the proposed equipment. Mott MacDonald was closely involved with the Owner in monitoring the performance of the EPC contractor.

The EPC Consortium was given a LNTP in January 2007 with a full NTP in February 2007. Project Substantial Completion occurred in late 2011.

Public Service of New Hampshire 50MW Coal and Wood Fired Repowering

Mott MacDonald was the Owner's Engineer for The Northern Wood Power Project, an innovative power generation project developed by Public Service of New Hampshire (PSNH), a Northeast Utilities Company subsidiary.

PSNH will replace an existing 50 megawatt coal-fired boiler with a new state-of-the-art circulating fluidized bed (CFB) boiler which uses wood chips for fuel while maintaining the capability to burn coal as a backup fuel. The project also included the installation of wood truck unloading facilities, wood storage building, processing building including wood screens and hogs, and new conveyors to transport the processed wood fuel to the boiler. Located at Schiller Station, the Northern Wood Power Project allowed PSNH to economically produce electric energy from environmentally sound renewable resources.

Mott MacDonald began its involvement with the project by performing a phased technical feasibility analysis beginning with site plan development to locate the new boiler and wood handling areas on the site, and general arrangement drawings to locate each major component. Mott MacDonald conducted a CFB technology review and obtained performance and emissions parameters from potential boiler suppliers. Mott MacDonald worked with an environmental consultant to complete the air modeling and other permitting activities.

During the feasibility phase, Mott MacDonald evaluated numerous design alternatives based on cost and schedule considerations taking into consideration the requirements of the existing facility and vendor information on key components. Mott MacDonald's decades of design experience with solid fuel projects combined with the total project perspective gained from managing dozens of turnkey projects proved to be the key in developing a cost effective, optimized solution for locating new components of such a large scale on a congested riverfront site.



During the next phase of the project, Mott MacDonald prepared bid specifications for the turnkey supply of the boiler island and the wood handling systems. Mott MacDonald developed the technical design basis for the turnkey contracts for all plant systems including civil, structural, mechanical, material handling, electrical, and controls, as well as the project execution criteria, and performance and emission requirements.

Mott MacDonald performed the technical evaluation of the turnkey bids including an assessment of the bidders' execution plans and schedules. Mott MacDonald's role included ensuring that the project's performance goals and environmental requirements would be met with the proposed equipment.

Mott MacDonald is currently responsible for monitoring the selected turnkey contractors for the boiler island and the wood handling area through the completion of the project.

Mott MacDonald performed its services as part of a team that included GenPower (Development), Gorrill-Palmer (Civil), and MacMillan & Donnelly (Environmental).

Additional information about the project is available on PSNH's web site at:

<http://www.psnh.com/Energy/EnergyProject/NWPP/overview.html>

Power Communications

Power Communications
573 Route 9P
Saratoga Springs, New York 12866
Email: sullivan@powerny.com
Office: 518-587-5995
Fax: 518-618-3145



Connecting Cutting-Edge Clean Energy Companies to Success

About:

Founded in 2003 and headquartered in Saratoga Springs, NY, Power Communications (“PowerComm”) is a strategic marketing communications firm, specializing in clean energy projects. PowerComm works with select wind, solar and natural gas companies who are committed to doing the right thing for the environment and the right thing for the communities in which they do business.

PowerComm brings deep understanding of the complex world of energy. Our success is based upon hard work and strong values underlying everything we do. We have spent significant time and energy understanding how people relate to energy projects and the best ways to communicate with them about energy.

Approach

The average person on the street doesn’t understand much about energy and how it impacts his or her life. At Power Communications, we know that in order for a project to be successful, it has to be accepted by its neighbors. That’s why we help premier clean energy companies educate, engage and inspire community members to understand more about the important role played by energy in their lives, how that relates to the need for new development and how a project can benefit a community’s future economy and environment.

PowerComm serves as trusted counsel to development directors, project managers and entrepreneurs, helping them connect with communities and navigate the challenges facing any project. We also help clients manage communications across portfolios of projects, so they can allocate their resources more efficiently and save money.

Community leaders, economic development professionals, neighbors, environmental interest groups, union members, neighborhood and media all play a key role in whether or not a clean energy project is successfully developed. PowerComm’s approach is to build positive, two-way communication among all these stakeholders.

We help clients listen to what the community has to say, harness the best ideas, and incorporate the community’s input to create cutting-edge energy projects. On top of that, we have long-standing relationships with key media outlets and prominent energy reporters across North America.

Creative Services

Power Communications maintains a full-time ***Adobe-Certified***¹ graphic design department employing a team of graphic designers to bring color, texture and impact to every message. Our web development team has developed scores of websites. The firm is experienced at implementing Twitter, LinkedIn, Facebook and other newly-developing social media vehicles to improve communications around projects.

Breadth of Experience

Clients ask Power Communications to manage the communications function on projects across North America. Through 2013, Power Communications has worked on providing project communications services to major energy infrastructure projects in the following states/provinces:

- New York
- New Jersey
- Connecticut
- California
- Maryland
- Minnesota
- North Dakota
- Oklahoma
- Kansas
- Pennsylvania
- Virginia
- Ontario

A Sampling of PowerComm's clients¹ include:

- Alliance for Clean Energy (ACE NY)
- Azure Midstream Company
- BP Renewable Energy
- Competitive Power Ventures (CPV)
- D&D Power
- Delta Power
- EDP Renewables / Horizon Wind Energy
- Electric Power Supply Association (EPSA)
- E.ON Climate & Renewables, N.A.
- Independent Power Producers of New York, Inc. (IPPNY)
- Laser Northeast Gather Company
- Millennium Pipeline
- New York State Public Service Commission
- Ridgeline Energy / Northwind and Power

¹ Current and clients for which PowerComm has completed projects in the past 5 years.

Power Communications Management



Steven C. Sullivan

Managing Director

573 Route 9P * Saratoga Springs, NY
Phone: 518-587-5995 * Fax: 518-618-3145
sullivan@powerny.com
www.powerny.com



Experience:

Steven Sullivan has worked extensively in the electric power and energy industry over the past two decades, with emphasis on New York. In 2003, he founded Power Communications to provide strategic consulting, public relations and creative services to energy companies. In his current position, he is recognized as a leading advisor to cutting-edge energy companies across North America in matters of public affairs strategy, messaging, corporate branding, community outreach and media relations.

Prior to launching Power Communications, Mr. Sullivan served as the Director of Communications and Chief Spokesperson for the New York Independent System Operator (NYISO) during its start-up period where he spearheaded the initiative to brand the NYISO as the leading wholesale market in North America. Before joining the NYISO, Mr. Sullivan served as the Director of Communications for the Independent Power Producers of New York (IPPNY) where he played an integral role in bringing wholesale electric restructuring to New York and significantly expanded IPPNY's stature and influence.

Mr. Sullivan is a recognized expert, frequent speaker and writer on energy issues. He has three times chaired the *McGraw Hill Platt's Northeast Energy Forum* and was presented the *Annual Carrie Chapman Catt Award* for outstanding public service by the NYS League of Women Voters. Sullivan also served as a founding board member of the Fenner Renewable Energy Education Center (FREE Center).

Mr. Sullivan's project experience includes the following:

- **EDP Renewables / Horizon Wind Energy**

Mr. Sullivan headed up Horizon's community outreach efforts for Horizon from 2003-2009 working on Marble River, Maple Ridge, Dairy Hills and other wind projects developed by the company.

- **BP Renewable Energy**

He headed up community outreach efforts for BP's Cape Vincent Wind Farm and Brookhaven Solar project in New York as well as BP's Tunkhannock Wind Farm in Pennsylvania.

- **Laser Northeast Gathering Company**

Mr. Sullivan was the primary public relations and media consultant to Laser Northeast which successfully permitted and constructed the first natural gas gathering line between Susquehanna, Pennsylvania and Broome County, New York.

- **Competitive Power Ventures (CPV)**

Since 2008, Sullivan has served as the primary public relations consultant for CPV, executing the company's corporate branding, web presence, public and media relations strategies and on-the-ground project outreach initiatives. During this time, CPV has successfully permitted the Sentinel Power Project (Southern, CA - under construction) and the CPV St. Charles Energy Center

(Maryland). Other CPV projects for which Sullivan handles public outreach include, CPV Smyth (Virginia); CPV Woodbridge (New Jersey); CPV Towantic (Connecticut); CPV Nanticoke (Ontario); and CPV Vaca Station (California).

- **Millennium Pipeline**

He has served as the New York pipeline company's public relations consultant and principal spokesperson since 2011 during which time Millennium successfully permitted its Minisink and Hancock Compressor station expansion projects.

- **Alliance for Clean Energy (ACENY)**

Mr. Sullivan was a founding member and public relations consultant during the start-up phase for the Alliance for Clean Energy New York (ACENY)

- **Independent Power Producers of New York, Inc. (IPPNY)**

He has served as a strategic advisor and developed numerous collateral pieces for the Albany-based trade association representing more than 75 percent of New York's electric generation industry.

- **Ridgeline Energy / Northwind and Power**

Mr. Sullivan has served as a communications consultant and creative advisor for the company's outreach efforts related to the two community-scale wind farms it is developing in New York.

- **New York State Public Service Commission**

Mr. Sullivan worked with PSC staff in 2006 and 2007 to produce the agency's annual reports.

- **Electric Power Supply Association**

He served as a strategic advisor and public and media relations consultant for the Washington, D.C.-based national trade association representing independent power generation companies.

- **Azure Midstream Company**

Mr. Sullivan oversees all public, media and community relations for the Houston-based midstream company with projects in Ohio, Texas, West Virginia and Louisiana.

- **Brooklyn Navy Yard**

He has conducted various public relations projects for the New York City-based generator.

- **D&D Power**

Sullivan has provided ongoing public relations counsel and creative services to this fast-growing utility service company.

- **MACHGen / Athens Generating**

Sullivan provided creative services and branding materials to this company which owns the 1080 MW Athens Generating facility in New York's Hudson Valley.

- **E.ON**

He provided public outreach services to this company to gauge public opinion regarding the company's proposed wind farm in western New York state.

- **American Ref-Fuel / Corinth**

He worked to produce outreach materials for the company's proposed Corinth Waste-to-Energy facility in 2003.

Education:

- Middlebury College, Middlebury Vermont, Bachelors in English, 1986
- Breadloaf School of English, Middlebury Vermont, Summer 1985
- University at Albany, Masters Coursework, 1992
- Advanced Negotiations and Strategic Planning, Harvard Negotiating Project, 1994



Tom Collins

Project Manager

573 Route 9P * Saratoga Springs, NY

Phone: 518-587-5995 * Fax: 518-618-3145

collins@powerny.com

www.powerny.com



Experience:

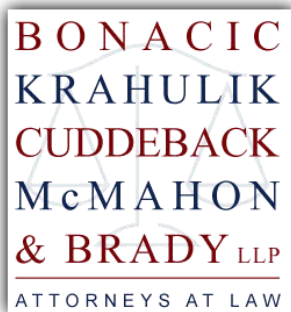
Tom is an experienced professional communicator with more than two decades of direct experience working on New York state and national energy issues. Tom provides public relations services to Power Communications clients including strategic planning, media relations, community relations, editorial, and charitable giving programs.

Tom retired from New York State service in November of 2006 with over 25 years of experience in the public sector, most recently serving as Director of Communications for the nationally renowned New York State Energy Research & Development Authority (NYSERDA) from 1995-2006. As a member of the Authority's Senior Management Team, he was responsible for directing the Authority's communications and marketing activities. Prior to that, he spent 15 years in the State Senate and Assembly as a communications specialist.

Tom also served on the Board of Directors of the National Association of Government Communicators as the Association's Director of Communications. He is an accomplished public speaker and media coach, having presented at several national conferences and association meetings on dealing with the media. He is also the author of a national feature article about dealing with the media.

Some recent NY-based Power Communications projects where Tom has been involved include:

- CPV Valley Energy Center
- Laser Northeast Gathering pipeline
- Millennium Pipeline



MIDDLETOWN
90 Crystal Run Road
Suite 104
Middletown, NY 10941
845-703-3101

WARWICK
Two Bank Street
P. O. Box 391
Warwick, NY 10990
845-986-1156

About Bonacic, Krahulik, Cuddeback, McMahon & Brady, LLP

Bonacic, Krahulik, Cuddeback, McMahon & Brady, LLP is a full service law firm providing sophisticated legal services for clients in New York's Hudson Valley region and beyond. Our attorneys are the best at what they do and our collective experience covers a broad range of service areas addressing diverse needs. From your initial consultation and throughout the legal process, you will always know you're in expert hands with Bonacic, Krahulik, Cuddeback and McMahon. We take great pride in building strong relationships with our clients and responding promptly and efficiently. We deliver sound advice that is based on knowledge, experience and insight, enabling us to fight hard for clients to achieve the most favorable outcomes. Our mission is to provide expert counsel, ultimate success, and peace of mind.



SCOTT BONACIC
Managing Partner

Phone: 845-703-3101

Fax: 845-703-3110

Email: sbonacic@hvlaw.net

Practice areas:

- Municipal law
- Land Use
- Corporate Law
- Residential and Commercial Real Estate
- Criminal defense

Scott Bonacic earned his B.S. at University of Scranton (Magna Cum Laude) and his law degree from Albany Law School (Cum Laude). Scott formerly served as Assistant District Attorney in Orange County and as associate Counsel to Senator Michael Balboni, one of the nation's foremost experts in homeland security legislation.

Bonacic appears before municipal planning and zoning boards, drafts contracts, negotiates variances, undertakes due diligence studies for commercial and residential projects, and litigates disputes.

In addition to practicing in real estate development/sales, Bonacic supervises the firm's municipal law practice section. He has serves as Counsel to municipalities in Orange County and has strong relations with government officials in municipalities throughout the Hudson Valley. The firm currently represents municipalities in Orange County (Town of Chester, Town of Monroe, and Village of Monroe), Sullivan County (Town of Mamakating Planning Board), and Delaware County (Town of Bovina and Town of Stamford).

LEVITAN & ASSOCIATES, INC.

MARKET DESIGN, ECONOMICS AND POWER SYSTEMS

Levitan & Associates, Inc. – Fuel Supply

LAI is a Boston based energy management consulting firm that specializes in wholesale market design, resource planning, energy procurement, and fuel supply management. Since its formation in 1989, LAI has represented utilities and generators on fuel matters in New York, New England, PJM, the Pacific Northwest and inland Southwest. A synopsis of LAI's consulting work in New York follows.

LAI has advised NYPA on various transportation and commodity supply matters, and also provided ongoing technical support throughout RFP #5, culminating in the selection of Astoria Energy II. LAI has represented NYPA before PJM on transmission engineering and security analysis relating to NYPA's firm transmission withdrawal rights on Hudson Transmission Project ("HTP") and HTP's Interconnection Service Agreement.

From 2003 through 2013, LAI has supported LIPA on diverse technology assessment and market design evaluations pertaining to new transmission projects from PJM and ISO-NE to Long Island, as well as fuel related due diligence to support the selection of new peakers and combined cycle plants on Long Island. Common to these engagements has been the rigorous assessment of natural gas and deliverability conditions affecting fuel supply security objectives on Long Island. LAI has performed many engineering economic analyses to support LIPA's executive management decisions during a period of unprecedented growth. LAI has provided commercial assistance to support LIPA's UDR elections on both Neptune and Cross Sound Cable, including the selection of capacity resources in neighboring RTOs. The firm's natural gas and electric production simulation modeling capability coupled with LAI's resource planning and economics expertise has been an integral part of LIPA's due diligence to support long term resource commitments. LAI has conducted technical studies on National Grid's local system. Many resource planning studies have been performed in relation to cable scheduling protocols in New England, New York and PJM. LAI also conducted the market, safety and environmental evaluation of the proposed Broadwater LNG terminal. LAI's technical reports have been presented to LIPA's Trustees and to the Governor's Office.

LAI has also performed many infrastructure adequacy assessments and market design studies for NYISO, including ongoing pipeline and storage monitoring services relating to new construction across NYCA. Pipeline infrastructure adequacy assessments have been conducted for NYISO, ISO-NE, PJM and the ISO of Ontario. LAI has represented NYISO on the Demand Curve Reset process.

LAI has represented Con Edison on fuel related matters relating to the Brooklyn Navy Yard, Linden Cogen, Indeck, Sithe Independence, Masspower, and Selkirk, among others. LAI has provided commercial advisory support to Con Edison on PPA structuring efforts. The firm has also represented in-city generators on the Demand Curve Reset process. LAI has also prepared the fuel supply and transportation plans for new generation projects in New Jersey that are electrically connected to New York City. Valuation services have been performed for lenders and equity investors in power plants throughout New York State.



Richard L. Levitan

President & Principal

rll@levitan.com

Richard leads the firm's advisory services in the areas of power plant valuation, wholesale power procurement, pipeline / storage adequacy assessment, rate design, and asset acquisitions. Mr. Levitan has 34 years of industry experience in pipeline transportation management, finance, regulation, and wholesale market analysis. He advises regulatory commissions, investors, and utilities on diverse commercial matters pertaining to resource planning, wholesale procurement, capacity market mechanisms, and gas / electric interdependencies. He performs due diligence on quick-start peakers and combined cycle plant resources, renewable energy technologies, and HVDC transmission projects. Mr. Levitan has managed gas pipeline adequacy and storage deliverability studies for independent system operators as well as gas and electric utilities throughout the U.S. He has advised diverse stakeholders on Open Access Transmission Tariffs, and has testified many times at FERC and before state and provincial regulatory commissions.

Prior to founding LAI in 1989, Mr. Levitan was a consultant at Stone & Webster Management Consultants, Inc. In the late 1970s he was an Economist at Pacific Gas & Electric. He received his B.A. from Cornell University and his Masters degree from Harvard University where he specialized in Energy Economics. He also attended Stanford University's Post-graduate Industrial Organization Management Program.



Seth G. Parker

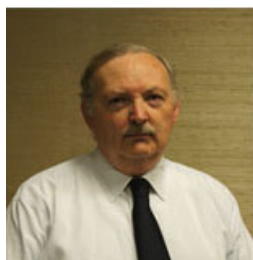
Vice President & Principal

spg@levitan.com

Seth is an economics and financial manager with 34 years of experience in wholesale market design, price forecasting, power and transmission project economics, credit and collateral issues, and the development, valuation, and financing of both conventional and renewable resources. Mr. Parker has assisted the NYISO with updating the Spot Capacity Market demand curve parameters and generation companies on capacity market design in multiple markets. Mr. Parker has testified before state regulatory commissions, in state and federal courts, and before FERC on diverse matters pertaining to offshore wind and renewable resources, integrated resource planning, wholesale procurement practices, power plant economics, financial issues, and competitive market design.

Prior to joining LAI in 1998, Mr. Parker was a Vice President of Stone & Webster Management Consultants where he conducted due diligence in support of over \$6 billion of domestic and overseas power project debt. He held positions at J. Makowski Associates, 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. He has completed additional coursework in geopolitics at the Kennedy School, Harvard University.



John R. Bitler

Vice President & Principal

jrb@levitan.com

John has 40 years of experience in the energy industry encompassing a wide range of fuel, power, and emissions control issues. Mr. Bitler advises utilities, generators, state regulatory agencies, and end-users on diverse matters pertaining to fuel markets, competitive power procurement administration, and emissions control technology. He is responsible for LAI's fuel market analysis activities and has directed wholesale power solicitations on behalf of the Illinois Power Agency to serve eligible retail customers of the Ameren Illinois Company. Mr. Bitler has submitted expert testimony before FERC and state regulatory agencies throughout the U.S. on behalf of utilities, industrial end-users and state entities.

Prior to joining LAI in 1992, Mr. Bitler was President of Environmental Catalyst Consultants, Inc., where he was responsible for engagements assessing the feasibility of catalytic emissions control processes. He previously was an Executive Consultant at Stone & Webster Management Consultants. His industry experience includes commercial development and planning positions at InterNorth, Inc. and engineering positions at 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.

Sara Wilmer

Executive Consultant

sw@levitan.com

Sara has 12 years of expertise in chemical engineering, power generation, heat dynamics and pipeline simulation modeling. She has developed steady-state and transient flow models of pipeline systems in order to analyze regional gas flows, delivery capacity, and contingency responses. She has supported RFP and procurement processes through website development and proposal analysis for many utility and regulatory clients. Ms. Wilmer has provided quantitative research, data management, and engineering and modeling support for a variety of projects, including market price forecasting and infrastructure assessments.

Ms. Wilmer has previous energy experience in legislative and policy analysis research for the Northeast-Midwest Coalition Congressional and Senate staff. She received her B.S. degree in Chemical Engineering from the Massachusetts Institute of Technology.

Alexander J. Mattfolk

Consultant

ajm@levitan.com

Alex provides research, modeling, and analytic support for several projects. He has prepared quantitative analyses and modeling support for FERC technical conferences and written detailed analysis of FERC proceedings. Mr. Mattfolk has also reviewed applicant testimony, produced interrogatories, and assisted in drafting testimony for Maryland PSC hearings concerning a utility merger and its effect on ratepayers. He has also performed RPS support by quantifying the socio-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.

- ▲ Site Planning
- ▲ Land Use Planning
- ▲ Mineral Resource Consulting
- ▲ Wetland Delineation and Permitting
- ▲ Mitigation Planning



- ▲ Wildlife and Botanical Studies
- ▲ Natural Resource Planning
- ▲ Forestry Consulting
- ▲ Environmental Impact Statements
- ▲ Soil Studies
- ▲ Environmental Site Assessments

P.O. Box 145 ▲ Montgomery, NY 12549 ▲ Telephone: (845) 457-8141 ▲ Fax: (845) 457-4763
email: basecamp@frontiernet.net

www.alpineec.com

Founded in 1989, Alpine Environmental Consultants, (AECI), is a multi-disciplined consulting firm offering a broad range of services.

Alpine is a small firm working collaboratively with other firms, large and small, as project needs dictate. We have worked extensively with Nosek Engineering, and Talcott Design, site-civil engineering firms, sharing space with Nosek Engineering. In addition to environmental investigations, the firm provides design-build services in the areas of water supply, wetlands, and site remediation. Our performance spearheading complex projects is widely known and appreciated. Our clients include municipalities, industry, developers, institutions, landowners, and the forestry/agricultural sector.

Bringing a certain balance to the design, review, and approval process is the keystone of our service to clients. We believe that society's needs for water resources, infrastructure, food, fiber, transportation, and recreation can be met responsibly. Our clients have found this balanced, responsible approach to development to be very profitable as well.

In design, review or construction, AECI staff are guided by these principles:

- Identify the client's needs and keep them in focus.
- Provide an honest assessment of the time frame and budget for the project.
- Maintain open communications between staff and clients.
- Seek client input throughout the process and deliver services in a timely and cost effective manner.

AECI Service Sector Disciplines:

Site Planning
Industrial Land Use Planning
Environmental Impact Assessment
Soil Science
Water Supply Investigations
Wetlands Design, Construction & Monitoring
Wildlife Resources
Mineral Resources
Municipal Representation
Environmental Services
Archaeology
Construction Inspection