PACIFIC ENERGY SYSTEMS INC.

ENGINEERS & PROJECT MANAGERS

CELEBRATING 18 YEARS OF SERVICE TO THE ENERGY INDUSTRY

STATEMENT OF QUALIFICATIONS

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PACIFIC ENERGY SYSTEMS, INC.

COMPANY PROFILE

INTRODUCTION

Pacific Energy Systems is a multidisciplinary consulting firm that has provided systems planning, engineering, and project management services to industries, utilities, institutions, and government agencies since 1989. The people at Pacific Energy Systems are our fundamental resource. Their experience, capabilities, and teamwork are the keys to successful projects and satisfied clients.

We have experienced staff in the following engineering disciplines and activities:

POWER GENERATION – Pacific Energy Systems staff has experience with a wide range of power generating resources including gas turbines, combined-cycle, cogeneration, steam, coal, biomass, waste-to-energy, and geothermal. The firm has prepared feasibility studies, plant optimization, preliminary designs, project development plans, EPC specifications, and equipment procurement. The staff has acted as the Owner's Project Manager and the Owner's Engineer during project development.

INSTITUTIONAL SYSTEMS – Pacific Energy Systems has assisted utilities, universities, hospitals, airports, and correctional facilities with a wide range of energy supply projects including cogeneration, combined heat and power, boilers, central steam systems, and standby power facilities. The firm has prepared feasibility studies, preliminary design, development plans, equipment specification and procurement, and EPC specifications.

SPECIALTY SERVICES – Pacific Energy Systems staff provides specialty services in the areas of development planning, regulatory review, operation and maintenance audits, performance testing, natural gas pipelines and fuel supplies.

We approach each assignment by listening to and understanding our clients' needs and then creatively applying the appropriate technology to fulfill those needs.

PACIFIC ENERGY SYSTEMS, INC.

PROFESSIONAL SERVICES

Pacific Energy Systems offers experienced professionals to provide planning, design, and project management services. Our main goal is client satisfaction. We do not offer prepackaged programs or solutions; instead, we respond directly to each individual client's needs. We adhere to strict standards of professionalism and quality. We provide a personal commitment to manage each project carefully and work closely with the client.

Pacific Energy Systems provides project evaluation, project management, feasibility study, and project management services in the following areas:

Project Experience Summary

- Engineering Due Diligence
- Construction Monitoring
- Project Management/Engineering
- Project Acquisition/Sale
- Operation & Maintenance
- Plant Performance Testing
- Project Development/Planning
- Feasibility Studies
- Preliminary Design
- Environmental Audits
- Energy Systems Planning
- Regulatory Review
- Renewable Energy
  - Biomass
  - Geothermal
  - Biogas
  - Wind and Other Renewables
  - Hydroelectric
- Chilled Water Systems

PACIFIC ENERGY SYSTEMS, INC.

CLIENTS

ABN AMRO Bank
Agua Caliente
Avista Power, Inc
Avista-Steag, LLC
Babcock & Brown
Babcock & Wilcox Company
Barakat & Chamberlin
Beaver Plant Operations
Benton County PUD
Blue Heron Paper
Brown and Caldwell
Calpine Corporation
Canadian Niagara Power
CH2M HILL
Charter Oak Energy, Inc.
CMS Generation
Cogen Development
Cogeneration Services, Inc.
Credit Suisse
D. Hittle & Associates
Elf Atochem
Enron/PGE
Far West Capital Corporation
Fluor Daniel
Franklin County PUD
General Electric Capital Corporation
GELLCO Infrastructure Services Pty, Ltd.
GPU International
Grays Harbor PUD
Great Western Malting Company
Hampton Lumber Company
Heller Financial
Illinova Generating Company
International Paper Company
J-Power
James River Corporation
Klickitat Energy Partners
Kootenai Electric
LFC Power Systems
Merrill International
Nahama & Weagant Energy
Nippon Credit Bank, Ltd.
Nippon Plant Engineering
Nooter/Eriksen
North Canadian Power
Northern Wasco County PUD
Northwest Gas Association
Northwest Natural Gas Company
Nova Northwest, Inc.
NRG Energy
Oregon Department of Corrections
Oregon Department of Energy
Oregon Economic Development Dept.
Oregon Health Sciences University
Oregon Natural Gas Development
Oregon State University
Oregon Trail Electric Cooperative
OREMET Titanium
Palo Alto Public Utilities
Pacific Northwest Generating Cooperative
PacifiCorp
Panda Energy International
Penwest, Ltd.
Port of Moses Lake
Portland General Electric Company
Portland General Energy Services
Portland International Airport
Power Resource Managers
Prudential Power Funding Associates
Public Utility District of Grant County
San Miguel Bada (Baoding) Brewery
San Miguel Corporation
Sempra Energy Resources
Springfield Utility Board
State Street Bank and Trust Company
Sulzer Bingham Pumps
United Technologies Energy Holdings
United Technologies Finance
U.S. Department of Energy
U.S. National Bank
U.S. Veterans Administration
Washington Department of Corrections
Westinghouse Credit Corporation
WP Energy

PROJECT LOCATIONS

International Projects

White Court, Alberta, Canada
Quezon, The Philippines
Ave Fenix, Tucuman, Argentina
Appin, New South Wales, Australia
White Court Cogeneration, Alberta, Canada
Merida III, Yucatan, Mexico
San Miguel Bada Brewery, Baoding, China
Zhuzhou Cogeneration, Zhuzhou, China
Tower, New South Wales, Australia
Sichaun Jialing Cogeneration, China
Ave Fenix Black Start Design, Argentina
Rio Generation Project, Colombia
Quetta, Pakistan

PROJECT EXPERIENCE SUMMARY

Pacific Energy Systems, Inc., has been engaged in projects throughout the United States and overseas as shown below. A summary of our experience is provided on the pages that follow.

PROJECT	FACILITY TYPE	OUTPUT	SERVICES PROVIDED
Benton PUD	CT Peaking	27 MW	PD, PO, PR SC
Franklin PUD	CT Peaking	43 MW	PD, PO, PR CM
Calpeak	CT Peaking	7 @ 50 MW	CM
Columbia Power	CT Peaking	90 MW	PD
El Dorado	Combined Cycle	550 MW	PD
Mint Farm	Combined Cycle	250 MW	PD
Sumas	CCCT-Cogeneration	125 MW	CM
Kingsburg	CCCT-Cogeneration	34 MW	TR, CP, PC, OB, OM
East Syracuse	CCCT-Cogeneration	100 MW	TR, CP, PC
Westbrook	CCCT-Cogeneration	550 MW	TR
Lake	CCCT-Cogeneration	100 MW	TR, CM, CP, PC, OM
Saranac	CCCT-Cogeneration	240 MW	TR
Allegany	CCCT-Cogeneration	57 MW	TR, CP, ET, PC
Mulberry	CCCT-Cogeneration	120 MW	TR, CM, PC
Goal Line	CCCT-Cogeneration	49 MW	TR, CM, PC
Indeck-Corinth	CCCT-Cogeneration	126 MW	TR, PC
Kamine-Milford	CCCT-Cogeneration	28 MW	OM
Pedricktown	CCCT-Cogeneration	117 MW	TR
Glens Falls	CCCT-Cogeneration	56 MW	TR, OM
Chevron, El Segundo	CCCT-Cogeneration	50 MW	PC, ET
O'Brien Energy, Newark	CCCT-Cogeneration	50 MW	TR
Silver Springs	CCCT-Cogeneration	55 MW	TR
Panda-Rosemary	CCCT-Cogeneration	180 MW	TR, OM
Panda-Brandywine	CCCT-Cogeneration	230 MW	TR
Springfield-Industrial	CCCT-Cogeneration	50-100 MW	FS
Springfield-Weyerhaeuser	CCCT-Cogeneration	50 MW	FS
Sanger	CCCT-Cogeneration	42 MW	TR, CM, CP, EA, OB, OM, PC, QF
Klickitat	CCCT-Cogeneration	50 MW	TR, CM, CP, PC
Grant County	CCCT-Cogeneration	50 MW	FS
Kamine-Natural Dam	CCCT-Cogeneration	56 MW	TR, PC, ET, OM
Ada	CCCT-Cogeneration	29 MW	OM
Rio, Colombia	CCCT	300 MW	FS
Doswell	CCCT	724 MW	TR

TYPES OF SERVICES

AS – Asset Sale
CM – Construction Monitoring/Management
CP – Construction Completion Certification
EA – Environmental Audit
ET – Environmental Test Certification
FD – Final Design
FS – Feasibility Study
OB – Operating Budget Review
OM – Operating & Maintenance Audit
PC – Performance Test Certification
PD – Preliminary Design
PO – Procurement
PR – Permitting
PT – Performance Test
RD – Resource Development Plan
SC – Services During Construction
SP – Staffing Plan
TR – Technical Review

Merida, Mexico	CCCT	450 MW	TR
Portland International Airport	CT Cogeneration	5 MW	FS
Vancouver Cogeneration	CT Cogeneration	20 MW	TR
Kingsford	Cogeneration	10 MW	FS
Ave Fenix, Argentina	CT	50 MW	FS, RD
Mist Res. Develop. Plan	CT	50 MW	FS, RD
Beaver-Livermore Falls	Wood	39 MW	TR, CP, PC, OB
Ryegate	Wood	20 MW	TR, CM, CP, PC, ET
Ashland	Wood	39 MW	TR, CP, PC, OB
Cadillac	Wood	39 MW	TR, CP, PC, OB, OM
Hillman	Wood	12 MW	PT
Madera	Biomass	20 MW	OM
Soledad	Biomass	14 MW	TR, CM, CP, PC, OM, OB, PT
Molokai	Biomass	4 MW	TR, PT, PC
Waste Fiber Recovery	Biomass Fuel Process.	---	OM
Zhuzhou, China	Coal/CFB/CHP	24 MW	AS, OB, SP
San Miguel Bada Brewery	Coal/CHP	12 MW	AS, OB, SP
Sichaun Jailing	Coal/Cogeneration	2 @ 140 MW	TR, OR
Quezon	Coal		TR
Salt City	Coal	20 MW	OM
Shady Point	Coal	311 MW	TR
Morgantown	Coal/CFB	52 MW	TR
Culver	Coal/CFB	100 MW	TR, PC
Central Power & Lime	Coal/CFB	120 MW	OM
Ave Fenix, Argentina	Diesel Standby	1.3 MW	FD
Entenmanns Bakery	Diesel Cogeneration	11 MW	TR
Great Western Malting-L.A.	Diesel, Cogeneration	5 MW	FS
U.S. Bank Operations Center	Diesel, Cogeneration	8 MW	FS
Appin, NSW, Australia	Coal Seam Gas Engines	54 MW	TR
Tower, NSW, Australia	Coal Seam Gas Engines	40 MW	TR
Wailua	Hydroelectric	10 MW	TR
Auger Falls	Hydroelectric	10 MW	TR
Steamboat I & IA	Geothermal	12 MW	TR, CM
Steamboat II and III	Geothermal	24 MW	TR, CP, PC
Heber	Geothermal	---	TR
OHSU Steam System Improve.	Central Steam System	---	FS
OHSU Boiler Economizer	Central Steam System	---	FS, FD, CM, CP, PC
OHSU Steam Sys. Master Plan	Central Steam System	---	FS
OHSU Boiler Plant Expansion	Central Steam System	---	FD

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PACIFIC ENERGY SYSTEMS, INC.

PROJECT EXPERIENCE SUMMARIES

Descriptions of typical projects performed by Pacific Energy Systems are presented on the pages that follow. In most cases, Pacific Energy Systems has been engaged in more projects than those listed. A complete list of projects can be provided if desired.

Project Experience Summaries

- ENGINEERING DUE DILIGENCE
- CONSTRUCTION MONITORING
- PROJECT MANAGEMENT/ENGINEERING
- PROJECT ACQUISITION/SALE
- OPERATION & MAINTENANCE
- PLANT PERFORMANCE TESTING
- PROJECT DEVELOPMENT/PLANNING
- FEASIBILITY STUDIES
- PRELIMINARY DESIGN
- ENVIRONMENTAL AUDITS
- ENERGY SYSTEMS PLANNING
- REGULATORY REVIEW
- CHILLED WATER
- RENEWABLE ENERGY
  - BIOMASS
  - GEOTHERMAL
  - BIOGAS
  - WIND & OTHER RENEWABLES
  - HYDROELECTRIC

ENGINEERING DUE DILIGENCE
Selected Projects

CLIENT	PROJECT
Westinghouse Credit Corp	Pacific Energy Systems provided technical support to Westinghouse Credit Corporation in its evaluation of this project for financing. The plant is a nominal 40-MW, natural-gas-fired, combined-cycle cogeneration plant in Sanger, California. The thermal host is an animal feed plant that uses biomass materials (orchard wood chips) to produce cattle feed. *John R. Martin, P.E., Project Manager*
General Electric	Pacific Energy Systems was retained to conduct an independent evaluation and construction services for the Lake Cogeneration Project in Umatilla County, Florida. The project consisted of two General Electric LM6000 gas turbine-generators with a combined-cycle steam turbine-generator. The gross output of the project is 100-MW. Pacific Energy Systems' review included the equipment specifications, the engineering, procurement, and construction (EPC) contract; permits; project schedules; heat balances; O&M costs and plans; gas purchase agreements; steam supply agreement; and the power purchase agreement. Construction services included monthly monitoring of the work performed by Zurn/NEPCO and the major equipment suppliers. Pacific Energy Systems also monitored startup and performance testing.
General Electric Capital	Pacific Energy Systems was retained to conduct an independent evaluation of the East Syracuse Cogeneration Project in East Syracuse, New York. The project consisted of two General Electric LM6000 gas turbine-generators with a combined-cycle steam turbine-generator. The gross output of the project is 98-MW. Pacific Energy Systems' review included the equipment specifications, the EPC contract, permits, project schedules, heat balances, O&M plans and costs, gas purchase agreements, steam supply agreement, FERC documents, and the power purchase agreement. *Hermann Werber, P.E., Project Manager*

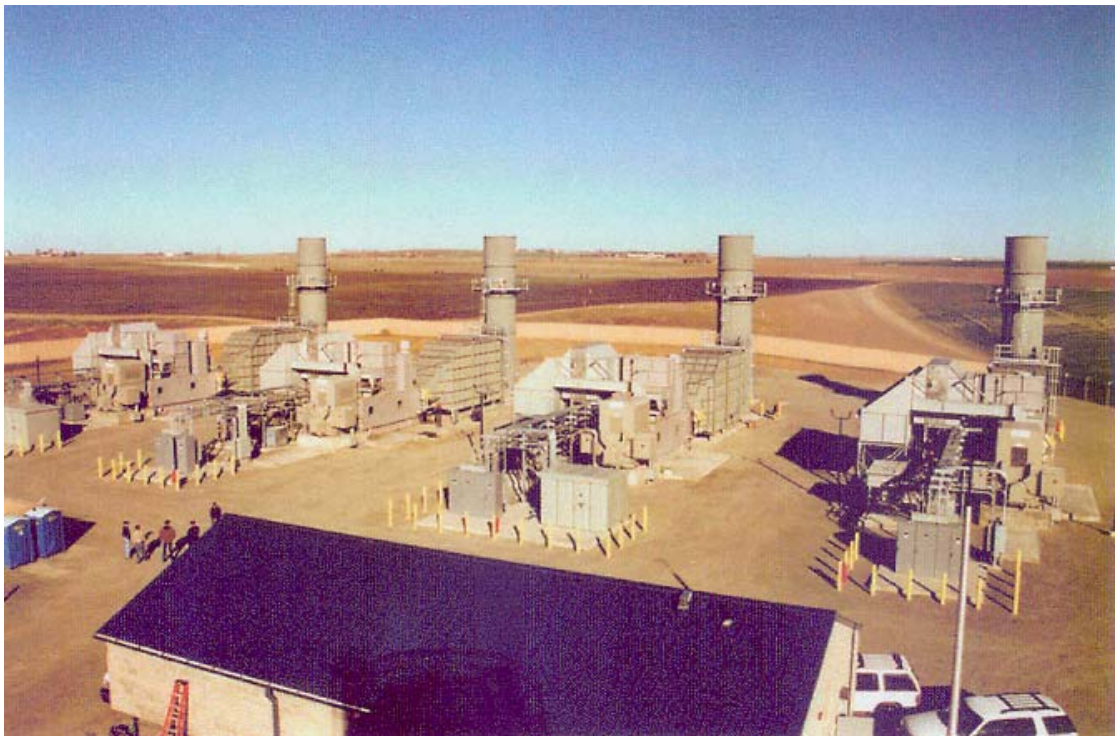
CLIENT	PROJECT
General Electric Capital	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Beaver-Livermore Falls Wood Waste Project located in Livermore Falls, Maine. GE Capital provided construction financing for the 39.5-MW project. The plant burns sawmill waste and whole tree chips in a 334,000-lb/hr boiler, supplying steam to a General Electric turbine-generator. Pacific Energy Systems' review included the project design documents, schedules, heat balances, operations and maintenance contract, and power purchase agreement. A report describing the technical review of the project was submitted to GE Capital. *Hermann Werber, P.E., Independent Engineer*
Westinghouse Credit	Pacific Energy Systems prepared a plant evaluation report for a 4-MW electric generating plant on the island of Molokai, Hawaii. The report included a plant performance test evaluation that determined whether the project was operating at guaranteed performance levels. *John R. Martin, P.E., Project Manager*
ABN AMRO	Ryegate Biomass Power Project – The independent engineer during the design, construction startup, and operation of this 20-MW, wood-fired electric generating plant in East Ryegate, Vermont. Pacific Energy Systems (PES) staff conducted an independent evaluation of the plant design, construction, and operation and maintenance planning, and attended project progress meetings. Monthly reports included a recommendation on the contractor's draw request. *John R. Martin, P.E., Independent Engineer*

CLIENT	PROJECT
General Electric Capital	Pacific Energy Systems performed the independent engineering review of the Entenmann's Bakery cogeneration project that consisted of four MAN dual-fuel diesel generators and heat recovery boilers. The total gross electrical capacity of the project was 5.4-MW. It also provided process steam and hot water to the nearby Entenmann's Bakery as a qualified facility under the Public Utilities Regional Policies Act (PURPA). Pacific Energy Systems reviewed the technical feasibility of the project, including all permits, contracts, performance, and costs for this project. *Hermann Werber, P.E., Independent Engineer*
General Electric Capital	Pacific Energy Systems was retained to conduct an independent evaluation of the Steamboat Geothermal Project, located in Steamboat, Nevada. Pacific Energy Systems' review included the available design documents, equipment specifications, EPC contract, project schedules, heat balances, O&M plans, and the power purchase agreement. *Hermann Werber, P.E. Independent Engineer*
GELLCO Infrastructure Services	Pacific Energy Systems performed a technical review of the Appin and Tower electric-generating facilities. The plants are located in New South Wales, Australia, and are designed to burn coal-seam gas in 94 one-megawatt, reciprocating, spark-ignited engine-generators. Pacific Energy Systems reviewed the plant design and construction, heat rate and output, and planned operation and maintenance costs. Recommendations were developed to assist GELLCO with its equity investment *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Merrill International Charter Oak Energy	Merrill International and Charter Oak Energy (Northeast Utilities) retained Pacific Energy Systems to act as the Owner's Engineer for the Ave Fenix power project. The project consists of four GE LM6000 gas turbine-generators in a simple-cycle configuration. Pacific Energy Systems was responsible for monitoring the construction, startup, and testing of the facility. Pacific Energy Systems developed the performance test procedure with the contractor and certified the test results.
General Electric Capital	Pacific Energy Systems was retained to monitor construction of the East Syracuse Cogeneration Project in East Syracuse, New York. The project consisted of two General Electric LM6000 gas turbine-generators with a combined-cycle steam turbine-generator. The total gross output of the project is 98-MW. Pacific Energy Systems visited the construction site monthly and prepared monthly construction progress reports and recommendations for the monthly construction draw. Pacific Energy Systems also monitored startup and certified the plant performance test results. *Hermann Werber, P.E., Project Manager*

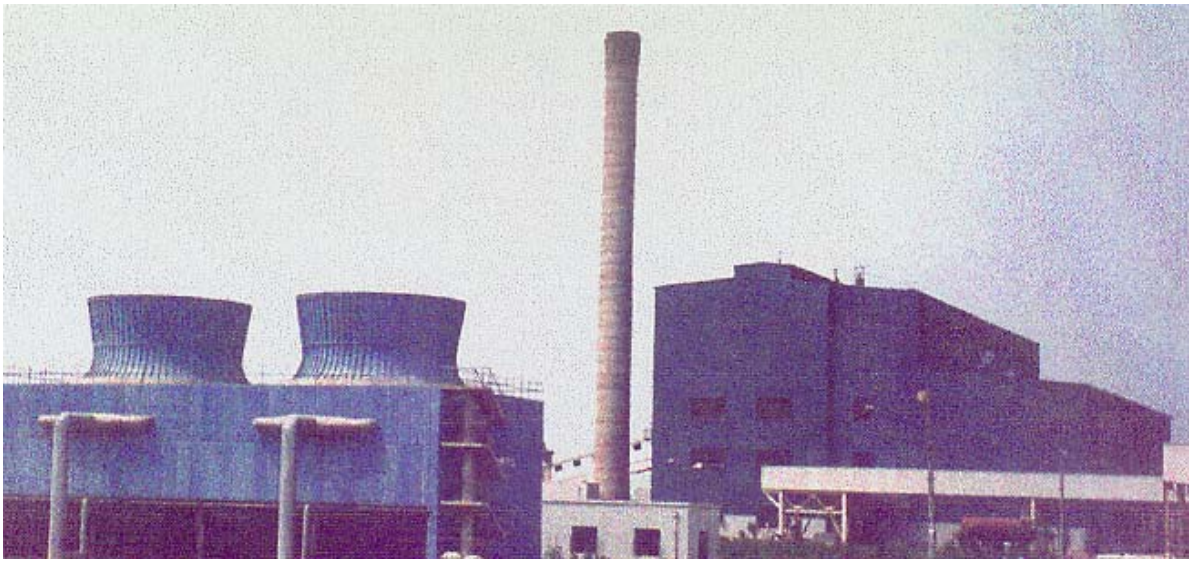
CLIENT	PROJECT
Westinghouse Credit ABN AMRO Bank	Pacific Energy Systems was the independent engineer for Westinghouse Credit Corporation and ABN AMRO Bank during the construction and startup of this 13.4-MW, wood-fired electric generation plant in Soledad, California. Pacific Energy Systems provided monthly construction reports and recommendations on the contractor's draw request. *John R. Martin, P.E., Project Manager*
ABN AMRO Bank	Ryegate Biomass Power Project – The independent engineer during construction and startup of this 20-MW, wood-fired electric generating plant in East Ryegate, Vermont. Pacific Energy Systems staff conducted an independent evaluation of the plant construction and attended project progress meetings. Monthly reports included a recommendation on the contractor's draw request. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Franklin/Grays Harbor PUD's	Franklin County, Washington, PUD and Grays Harbor PUD retained Pacific Energy Systems as the project engineer and project manager for the development of a 43-MW peak power generating facility located in Pasco, Washington. Pacific Energy Systems prepared specifications for the gas turbine generators and catalyst systems, obtained proposals, and assisted the PUD's with the procurement of the major plant systems. Pacific Energy Systems prepared the plant preliminary design that included plant design criteria, major system descriptions and flow diagrams, heat and mass balances, water balances, and initial plant layouts. Pacific Energy Systems retained sub-consultants to obtain the land-use and air permits and prepared specifications to retain an engineering and construction management company to provide detailed design and construction. Pacific Energy Systems assisted the clients during detailed design and construction of the facility. *John R. Martin, P.E., Project Manager*



CLIENT	PROJECT
Merrill International Charter Oak Energy	Merrill International and Charger Oak Energy (Northeast Utilities) retained Pacific Energy Systems as the Owner's Engineer for the Ave Fenix power project. The project consists of four GE LM6000 gas turbine-generators in a simple-cycle configuration. The EPC contractor was Stewart & Stevenson International. Engineering Design Group was the Design engineering firm. Stewart & Stevenson Operations, Inc., operates the facility. Pacific Energy Systems was responsible for the design and scope review, including electrical and natural-gas interconnections, and monitored the design, construction, startup, and testing of the facility. Pacific Energy Systems developed the performance test procedure with the contractor and certified the test results.
Standard Technical Specifications	Sempra Energy Resources retained Pacific Energy Systems to develop Standard Technical Specifications for the engineering, procurement, and construction of new combined-cycle power plants. Sempra used the specifications to retain EPC contractors to build its new facilities. *John R. Martin, P.E., Project Manager*
Calpine Corporation	Pacific Energy Systems was asked to prepare a Construction Management Manual for the Sumas Cogeneration Project in Washington. The manual was designed to provide a definition of responsibilities for Calpine as construction manager and to define the responsibilities of, and interfaces with major project participants. The manual also describes the construction operating procedures. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
San Miguel Bade Brewery Co.	Pacific Energy Systems assisted San Miguel Bada (Baoding) Brewery Co., Ltd, with the offering to sell a coal-fired 13.6-MW combined heat and power (CHP) facility at its brewery in Baoding City, Hebei, China. Pacific Energy Systems prepared an offering memorandum and contacted international independent power producers (IPP) for expressions of interest. Selected IPP's were provided facility tours and data packages to prepare proposals. Proposals were received and negotiations were held with two potential purchasers. *John R. Martin, P.E., Project Manager*
Calpine Corporation	Pacific Energy Systems was retained to provide technical due diligence for the acquisition of the 530 MW HPP combined-cycle power project in Hermiston, Oregon. Calpine was the successful bidder and subsequently successfully built the project. *John R. Martin, P.E., Project Manager*



CLIENT	PROJECT
Westinghouse Credit Corp.	Pacific Energy Systems was commissioned to review and evaluate the operations, maintenance, and fuel supply for the 13.4-MW Soledad power plant. During the first six months of operation, the plant's costs for operations, maintenance, and fuel were above the pro forma levels, and its electrical production had been below plan. The objective of the evaluation was to identify operation and maintenance problems and recommend improvements. *John R. Martin, P.E., Project Manager*
Credit Suisse and Westinghouse Credit Corp.	Pacific Energy Systems was retained to review the efficiency of the Sanger Cogeneration Plant and compare its operating efficiency with the minimum FERC standards for qualified cogeneration facilities. The objective of the review was to determine whether the plant was meeting minimum FERC standards and, if not, whether it could meet the standards in its present configuration. Additional process equipment was also reviewed to determine whether it would be necessary to meet the FERC efficiency standard. Pacific Energy Systems was subsequently retained to monitor the installation of additional process dryers that increase the thermal demand on the cogeneration system. *John R. Martin, P.E., Project Manager*

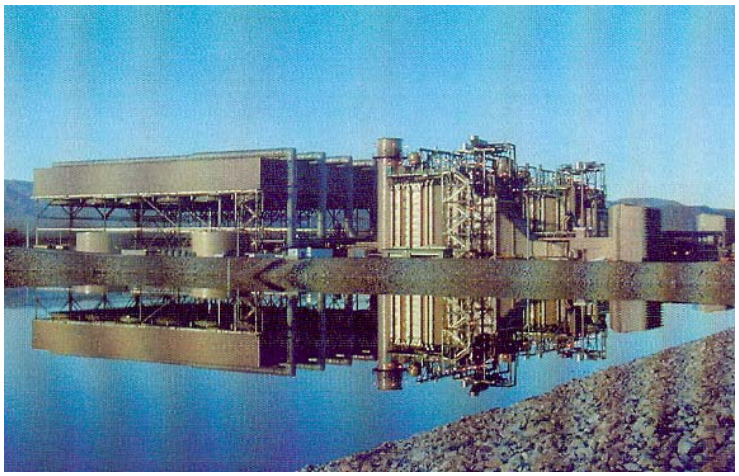
CLIENT	PROJECT
San Miguel/Baoding Brewery	Pacific Energy Systems was retained to develop a commissioning plan for a 12-MW coal-fired cogeneration plant located in Baoding, China. The cogeneration facility provides all steam and electricity required for the brewery operations. In addition, Pacific Energy Systems assisted the plant operating staff with the accomplishment of the commissioning activities. *John R. Martin, P.E., Project Manager*
San Miguel/Baoding Brewery	Pacific Energy Systems was retained to provide plant managers for a 12-MW coal-fired cogeneration plant for a period of 10 months. The plant manager was responsible for the day-to-day operation of the cogeneration facility and reported directly to the general manager of the brewery. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Franklin PUD/Grays Harbor PUD	Franklin County, Washington, PUD and Grays Harbor PUD retained Pacific Energy Systems as the project engineer and project manager for the development of a 43-MW peak power generating facility located in Pasco, Washington. Pacific Energy Systems staff participated in the development of the plant performance test procedure, observed the performance tests, and reviewed and certified the results. *John R. Martin, P.E., Project Manager*
GE Capital	Pacific Energy Systems was retained to conduct an independent evaluation of the Beaver-Livermore Falls Wood Waste Project located in Livermore Falls, Maine. GE Capital provided construction financing for the 39.5-MW project. Pacific Energy Systems staff participated in the development of the plant performance test procedure, observed the performance tests, and reviewed and certified the results. *Hermann Werber, P.E., Project Manager*
Credit Suisse and Westinghouse Credit Corp.	Pacific Energy Systems also reviewed the efficiency of the Sanger Cogeneration Plant and compare its operating efficiency with the minimum FERC standards for qualified cogeneration facilities. Pacific Energy Systems was subsequently retained to monitor the installation of additional process dryers that increase the thermal demand on the cogeneration system. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Westinghouse Credit Corp. and ABN AMRO Bank	Pacific Energy Systems was the independent engineer during the construction, startup, and operation of this 13.4-MW, wood-fired electric generation plant in Soledad, California. Pacific Energy Systems staff participated in the development of the plant performance test procedure, observed the performance tests, and reviewed and certified the results. *John R. Martin, P.E., Project Manager*
Hillman Biomass Project	Pacific Energy Systems assisted LFC Power Systems with the development of plant heat balances and performance test procedures for the Hillman Biomass Project in Michigan. *John R. Martin, P.E., Project Manager*
Westinghouse Credit Corp.	Pacific Energy Systems prepared a plant evaluation report for a 4-MW electric generating plant on the island of Molokai, Hawaii. The report included a plant performance test evaluation that determined whether the project was operating at guaranteed performance levels. *John R. Martin, P.E., Project Manager*

PROJECT DEVELOPMENT/PLANNING
Selected Projects

CLIENT	PROJECT
Blue Heron Paper Company	Pacific Energy Systems was retained to prepare an Energy Development Plan, including comprehensive conservation measures and onsite cogeneration feasibility study. The cogeneration Development Plan included all requirements necessary to develop a cogeneration facility including engineering, permitting, financing, procurement, construction, startup and operations. *John R. Martin, P.E., Project Manager*
Avista-Steag	Preliminary engineering for the 240-MW Mint Generating Station in Longview, Washington was prepared by Pacific Energy Systems. The Scope of Services included preparation of heat balances, emission data, water balances, process flow diagrams and plant general arrangement drawing. The information generated was used to support the project permitting. *John R. Martin, P.E., Project Manager*
Sempra Energy Resources	Pacific Energy Systems was retained to prepare the preliminary engineering for the 550-MW Phase 2 expansion of the El Dorado Generating Station in Boulder City, Nevada. The Scope of Services included preparation of heat balances, emission data, water balances, process flow diagrams and plant general arrangement drawing. The information generated was used to support the project permitting, which were subsequently obtained. *John R. Martin, P.E., Project Manager*



CLIENT	PROJECT
Oregon State University	Pacific Energy Systems is assisting Oregon State University (OSU) evaluate the repurchase of the campus electric distribution system from its utility supplier and the formation of a cooperative utility to expand, own, and operate the on-campus electrical and steam distribution system. In addition, the use of a high efficiency combine heat and power system was evaluated for the new Energy Center. *John R. Martin, P.E., Project Manager*
Oregon Health Sciences University - Steam System Master Plan	A steam system master plan was prepared by Pacific Energy Systems to provide a basis for expanding OHSU boiler capacity to met growing campus demand. Pacific Energy Systems also evaluated the possible installation of a cogeneration facility at OHSU and the feasibility of forming an independent campus utility to own and operate the campus utility system. Campus Utilities, Inc., was formed but not placed into operation pending deregulation of Oregon electric utilities. *John R. Martin, P.E., Project Manager*
Oregon Health & Sciences University	Pacific Energy Systems was selected to design the expansion to the Oregon Health Sciences University Energy Management Center. The boiler plant expansion includes the installation of a new 60,000-pound-per-hour boiler and upgrades to the existing boiler, including a new burner. The plant auxiliary systems are being upgraded, including the condensate and feedwater pumps, deaerator, natural gas and fuel oil supply systems, and controls are being upgraded. Pacific Energy Systems prepared the purchase specification for the new boiler and prepared the drawings and specifications for the expansion of the boiler facility. *John R. Martin, P.E., Project Manager*
Oregon Health & Sciences University	Pacific Energy Systems was retained to design the expansion of the steam system at the OHSU Energy Management Center. This expansion included the installation of a new boiler rated at 60,000-pounds-per-hour. The boiler included an economizer, one new feedwater pump, startup/tuning vent and muffler, stack, and associated piping. *John R. Martin, P.E., Project Manager*

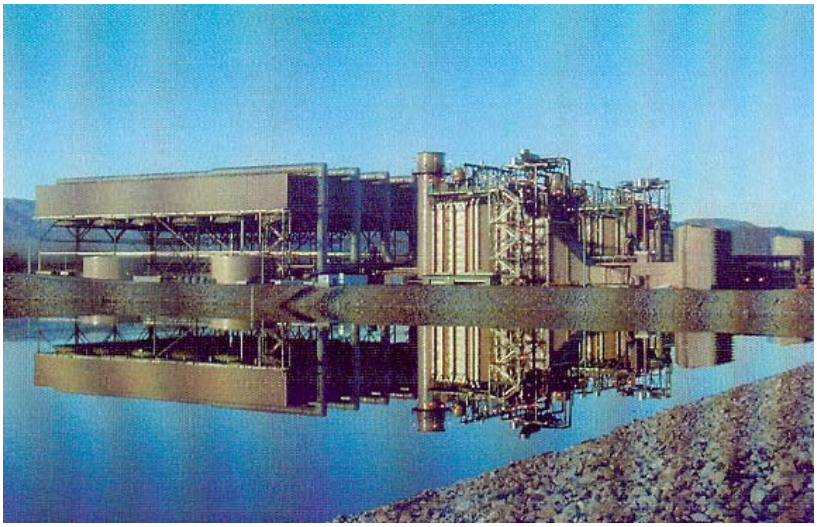
CLIENT	PROJECT
Oregon Health Sciences University	Pacific Energy Systems provided engineering assistance to evaluate the cost/benefit of shutting down the central steam system during summer months at the Oregon Health Sciences University. The evaluation considered alternatives to providing steam on a distributed basis on the campus and identified potential cost savings. *John R. Martin, P.E., Project Manager*
Oregon Health Sciences University	Pacific Energy Systems evaluated the economics of installing boiler economizers and a natural-gas supply to the University's central steam plant. The results were used to obtain funding from the Oregon State Board of Higher Education. Pacific Energy Systems then prepared turnkey specifications for the detailed design and installation of the boiler modifications and provided engineering services to the University during construction and startup of the modifications. *John R. Martin, P.E., Project Manager*
Oregon Health Sciences University	Pacific Energy Systems performed construction management services for Oregon Health Sciences University Central Boiler Expansion. The boiler plant expansion included the installation of a new 60,000 pound-per-hour boiler and upgrades to the existing boiler, including a new burner. The plant auxiliary systems were upgraded, including the condensate and feedwater pumps, deaerator, natural gas and fuel oil supply systems, and controls. *John R. Martin, P.E., Project Manager*
Oregon Health Sciences University	Pacific Energy Systems was selected to design the installation of an additional boiler in the Oregon Health Sciences University Central Boiler Plant. The boiler plant expansion included the installation of a new 80,000-pound-per-hour boiler and economizer. Pacific Energy Systems prepared the specifications for the new boiler and prepared the drawings and specifications for the installation. Included in the installation was a boiler vent designed to vent up to 40,000 pounds-per-hour steam to allow tuning of the burners on the boiler systems. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Great Western Malting	Pacific Energy Systems prepared a detailed technical and cost evaluation of installing a cogeneration system at the Great Western Malting Los Angeles Plant. The cogeneration system provides electricity and hot water for the operation of the malting plant. Evaluation of the permitting and air pollution control requirements is an important element of the project. *John R. Martin, P.E., Project Manager*
Springfield Utility Board	Pacific Energy Systems prepared a conceptual design, cost estimate, and schedule for the development of a cogeneration facility in Springfield, Oregon. The project was designed to provide steam to two wood products companies and electricity to the Springfield Utility Board (SUB). The cogeneration facility was based on natural-gas-fired combustion turbines with heat recovery boilers and would be owned by SUB. *John R. Martin, P.E., Project Manager*
Grant County Washington PUD	Pacific Energy Systems prepared a detailed technical and cost evaluation of four different cogeneration concepts. The initial evaluation assumed a base-loaded gas turbine cogeneration plant providing energy and capacity either for off-system sale or to displace priority-firm power. The evaluation included a development schedule, sensitivity analyses, and a brief conceptual design. Three of the concepts were subsequently evaluated under a variety of complex scenarios that involved hydro-firming and base load operation, as well as electric sales both on- and off-system. Study parameters included the District's monthly load and resource data, estimates of future loads and resources, the effect of ambient temperatures on gas turbine performance, and cogeneration plant capital and O&M costs. *John R. Martin, P.E., Project Manager*
Weyerhaeuser/Springfield	Pacific Energy Systems prepared a proposal to develop a natural-gas-fired cogeneration facility at the Weyerhaeuser Springfield Mill. The facility would be owned by SUB and was designed to generate electricity for SUB and steam for Weyerhaeuser. *John R. Martin, P.E., Project Manager*

FEASIBILITY STUDIES
Selected Projects

CLIENT	PROJECT
Portland International Airport	Pacific Energy Systems conducted a preliminary evaluation of the technical and economic feasibility of installing a cogeneration system at Portland International Airport. The cogeneration system would be designed to provide steam, chilled water, and electricity to expanding terminal facilities. The electrical generating capability of the cogeneration system would provide a reliable backup to the electricity supplied to the airport from the local electric utility. EPC contract, permits, environmental studies, fuel supply agreements, fuel studies, project design documents, schedules, budgets, heat balances, O&M contract, and power purchase agreement. GE Capital used a report describing the technical review of this project to close the construction financing. *John R. Martin, P.E., Project Manager*
Blue Heron Paper Company	Blue Heron Paper Company retained Pacific Energy Systems to prepare an Energy Development Plan, including comprehensive conservation measures and onsite cogeneration feasibility study. The cogeneration Development Plan included all requirements necessary to develop a cogeneration facility including engineering, permitting, financing, procurement, construction, startup and operations. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Sempra Energy Resources	Pacific Energy Systems was retained to prepare the preliminary engineering for the 550-MW Phase 2 expansion of the El Dorado Generating Station in Boulder City, Nevada. The Scope of Services included preparation of heat balances, emission data, water balances, process flow diagrams and plant general arrangement drawing. The information generated was used to support the project permitting, which were subsequently obtained. *John R. Martin, P.E., Project Manager*
Avista-Steag	Pacific Energy Systems was retained to prepare the preliminary engineering for the 240-MW Mint Generating Station in Longview, Washington. The Scope of Services included preparation of heat balances, emission data, water balances, process flow diagrams and plant general arrangement drawing. The information generated was used to support the project permitting. *John R. Martin, P.E., Project Manager*
Undisclosed Client	Pacific Energy Systems was retained by a confidential client to assist with preliminary design, permitting and development of an electric generating facility utilizing low-quality gas in existing underground reservoirs, thereby freeing up the reservoirs for future natural gas storage capacity. *John R. Martin, P.E., Project Manager*



CLIENT	PROJECT
Westinghouse Credit and Credit Suisse	Sanger Cogeneration – Prepared a technical review of a 40-MW combined-cycle cogeneration facility to support project financing. The thermal host was an animal feed plant that used biomass materials (orchard wood chips, grape pumas, etc.) to produce cattle food. *John R. Martin, P.E., Project Manager*
Credit Suisse and Westinghouse Credit Corporation	Pacific Energy Systems was retained to review the efficiency of the Sanger Cogeneration Plant and compare its operating efficiency with the minimum FERC standards for qualified cogeneration facilities. The objective of the review was to determine whether the plant was meeting minimum FERC standards and, if not, whether it could meet the standards in its present configuration. Additional process equipment was also reviewed to determine whether it would be necessary to meet the FERC efficiency standard. Pacific Energy Systems was subsequently retained to monitor the installation of additional process dryers that increase the thermal demand on the cogeneration system. *John R. Martin, P.E., Project Manager*
Westinghouse Credit Corp. and ABN AMRO Bank 	Pacific Energy Systems was the independent engineer during the construction, startup, and operation of this 13.4-MW, wood-fired electric generation plant in Soledad, California. As the independent engineer, Pacific Energy Systems served as a technical adviser to the lending institutions and provided monthly reports during project construction. *John R. Martin, P.E., Project Manager*

CLIENT	PROJECT
Oregon Department of Energy	Pacific Energy Systems provided staff support to the Oregon Department of Energy and the Energy Facility Siting Council in processing site certificate applications for the construction and operation of the following power plants: • Umatilla Generating Project • Klamath Generation Facility • Klamath Generation Peakers • Summit/Westward Project • Port Westward Generating Project • Hermiston Power Project • COB Energy Facility • Turner Energy Center • Stateline Wind Project • Newberry Geothermal Pilot Project The work included assisting with review and determination of application completeness and preparation of draft proposed orders for the site certificates. *John F. Larson, J.D., Legal & Regulatory Affairs*
Oregon Energy Facility Siting Council	Pacific Energy Systems was the independent contractor and project manager for the Oregon Energy Facility Siting Task Force. The task force was created by the 1995 legislature to prepare recommendations for the governor and the 1997 legislature addressing the public interest in the siting of energy facilities. *John F. Larson, J.D., Legal & Regulatory Affairs*
Oregon Department Of Energy	Pacific Energy Systems served as independent contractor providing supplemental staff support to the Oregon Department of Energy in reviewing applications for a 500-MW exemption from the requirement to show need for natural gas-fired generation under Oregon's energy facility siting laws. The exemption was awarded to the applicant able to demonstrate least impact from air emissions from its proposed facility. *John F. Larson, J.D., Legal & Regulatory Affairs*
Oregon Department of Energy	Pacific Energy Systems assisted the Oregon Department of Energy in the development of a Cost Guide for Decommissioning Oregon Energy Facilities to serve as a tool for estimating the actual cost of retiring an energy facility at the end of its useful life or upon abandonment by the certificate holder.

RENEWABLE ENERGY - BIOMASS

Selected Projects

CLIENT	PROJECT
Hillman Biomass Project	Pacific Energy Systems assisted LFC Power Systems with the development of plant heat balances and performance test procedures for the Hillman Biomass Project in Michigan. *John R Martin, Project Manager*
Molokai Biomass Project	Pacific Energy Systems prepared a plant evaluation report, for a 4-MW electric generating plant on the island of Molokai, Hawaii, for Westinghouse Credit Corporation. The report included a plant performance test evaluation that determined whether the project was operating at guaranteed performance levels. *John R. Martin, Project Manager*
Soledad Biomass Project	Pacific Energy Systems was the independent engineer for Westinghouse Credit Corporation and ABN AMRO Bank during the construction, startup, and operation of this 13.4-MW, wood-fired electric generation plant in Soledad, California. As the independent engineer, Pacific Energy Systems served as a technical adviser to the lending institutions and provided monthly reports during project construction. *John R. Martin, Project Manager*
Biomass Power Plant Operations And Maintenance Audit	Pacific Energy Systems was commissioned to review and evaluate the operations, maintenance, and fuel supply of the 13.4-MW Soledad biomass power plant. During the first six months of operation, the plant's costs for operations, maintenance, and fuel were above the pro forma levels, and its electrical production had been below plan. The objective of this evaluation was to identify problems and recommend improvements. *John R. Martin, Project Manager*
Ryegate Biomass Power Project	Pacific Energy Systems was the independent engineer for ABN AMRO Bank during the design, construction, startup, and operation of this 20-MW, wood-fired electric generating plant in East Ryegate, Vermont. As the independent engineer, Pacific Energy Systems served as a technical adviser to the lending institution. Pacific Energy Systems' representatives conducted an independent evaluation of the plant design, construction, and operation and maintenance planning. They attended project progress meetings and prepared monthly reports on the project completion. Monthly reports included an analysis and recommendation on the contractor's draw request. *John R. Martin, Project Manager*

RENEWABLE ENERGY - BIOMASS

Selected Projects

CLIENT	PROJECT
Beaver-Cadillac Biomass Power Plant	Pacific Energy Systems conducted an independent evaluation of the Beaver-Cadillac Power Plant located in Cadillac, Michigan. GE Capital provided the construction financing for the 39.5-MW (gross) project. The plant burns sawmill waste and forest residue in a 330,000-lb/hr boiler. Steam generated in the boiler will be supplied to a General Electric turbine-generator. Pacific Energy Systems' review included the EPC contract, permits, environmental studies, fuel supply agreements, fuel studies, project design documents, schedules, budgets, heat balances, O&M contract, and power purchase agreement. GE Capital used a report describing the technical review of this project to close the construction financing. *Hermann Werber, Project Manager*
Beaver-Cadillac Biomass Power Plant O&M Audit	Pacific Energy Systems has conducted annual operation and maintenance audits of the Cadillac Biomass Power Plant since 1994. The annual audit is conducted for NRG Energy and is submitted to the utility as required by the Power Purchase Agreement. *Hermann Werber, Project Manager*
Beaver-Livermore Falls Wood Waste Project	Pacific Energy Systems was retained by GE Capital to conduct an independent evaluation of the Beaver-Livermore Falls Wood Waste Project located in Livermore Falls, Maine. GE Capital provided construction financing for the 39.5-MW project. The plant burns sawmill waste and forest residue in a 334,000-lb/hr boiler, supplying steam to a General Electric turbine-generator. Pacific Energy Systems' review included the project design documents, schedules, heat balances, operations and maintenance contract, and power purchase agreement. A report describing the technical review of the project was submitted to GE Capital. *Hermann Werber, Project Manager*
Waste Fiber Recovery - Operation Audit	ABN AMRO and State Street Bank retained Pacific Energy Systems to conduct an operating audit on the waste fiber recovery biomass fuel processing facility in Hayward, California. The facility produced biomass fuel from recovered urban wood and biomass waste materials. *John R. Martin, Project Manager*

RENEWABLE ENERGY - BIOMASS

Selected Projects

CLIENT	PROJECT
Sanger Cogeneration And Animal Feed Plant — FERC Review	Credit Suisse and Westinghouse Credit Corporation retained Pacific Energy Systems to review the efficiency of the Sanger Cogeneration Plant and compare its operating efficiency with the minimum FERC standards for qualified cogeneration facilities. The objective of this review was to determine whether the plant was meeting minimum FERC standards and, if not, whether it could meet the standards in its present configuration. Additional process equipment was also reviewed to determine whether it would be necessary to meet the FERC efficiency standard. Pacific Energy Systems was subsequently retained to monitor the installation of additional process dryers that would increase the thermal demand on the cogeneration system. *John R. Martin, Project Manager*
Fairhaven Biomass Power Plant	Pacific Lumber Company retained Pacific Energy Systems to conduct a technical review to support the possible purchase of the 18 MW Fairhaven Biomass Power Plant in Eureka, California. The review assessed the current condition of the facility, long term operation and maintenance needs, and environmental compliance. *John R. Martin, Project Manager*

RENEWABLE ENERGY - GEOTHERMAL

Selected Projects

CLIENT	PROJECT
Newberry Geothermal Pilot Project	Pacific Energy Systems provided staff support to the Oregon Department of Energy in processing the application for site certificate for the construction of this geothermal power plant. The work included assisting with a review and determination of application completeness and preparation of the draft proposed order for the site certificate. The Energy Facility Siting Council issued a site certificate for this facility. *John F. Larson, Project Manager*
Steamboat Geothermal Project	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Steamboat Geothermal Project, located in Steamboat, Nevada. GE Capital provided the construction and term financing for this project. The facility was designed by The Ben Holt Company and constructed by TIC Construction. Pacific Energy Systems' review included the available design documents, equipment specifications, EPC contract, project schedules, heat balances, O&M plans, and the power purchase agreement. *Hermann Werber, Project Manager*
Imperial Valley Geothermal Projects	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Imperial Valley Geothermal Projects, located in the vicinity of the Salton Sea and the town of Calipatria, California. The facilities include eight different geothermal power plants that were operational at the time of the review. Pacific Energy Systems' reviewed the operation and maintenance histories, available design documents, equipment specifications, heat and mass balances, operation and maintenance budgets, and the power purchase agreements. *John R. Martin, Project Manager*
Heber Geothermal Project	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Heber Geothermal Project, located in the Imperial Valley, California. GE Capital provided equity financing to purchase the facility. The facility was operational at the time of the review. Pacific Energy Systems' reviewed the plant operation and maintenance history, available design documents, equipment specifications, heat and mass balances, operation and maintenance budgets, and the power purchase agreement. Pacific Energy Systems assisted GE Capital with the economic evaluation of the geothermal resource. *Hermann Werber, Project Manager*

RENEWABLE ENERGY - BIOGAS

Selected Projects

CLIENT	PROJECT
Buenos Aires Landfill Gas Recovery	Pacific Energy Systems prepared a proposal for the U.S. Initiative on Joint Implementation (USIJI) for the collection, and possible beneficial use, of landfill gas at the landfills in Buenos Aires, Argentina. USIJI was a pilot program having the objective of decreasing emissions of greenhouse gases through implementation of emission mitigation projects in developing countries. The project was approved by the governments of both Argentina and the United States. Pacific Energy Systems performed field testing of the landfill gas flow rate and prepared feasibility studies and gas recovery system designs for two private firms interested in funding the project.
Coffin Butte Landfill Gas to Energy	Pacific Northwest Generating Cooperative retained Pacific Energy Systems to evaluate issues related to the installation of a micro turbine to utilize landfill gas at the Coffin Butte Landfill, near Corvallis, Oregon
Roosevelt Landfill Gas to Energy	Pacific Energy Systems prepared technical sections of the Klickitat PUD's proposal to use gas from the Roosevelt Landfill for electricity generation. The PUD also retained Pacific Energy Systems to evaluate requirements for the gas cleaning and cooling system and to evaluate the compatibility of various engine models with the contaminants in the landfill gas when treated to varying degrees of purity.
Dairy Manure Anaerobic Digestion and Energy Recovery	For a private client who was considering investing in the project, Pacific Energy Systems evaluated the business plan and technical design of an integrated dairy manure anaerobic digestion system including use of the digester gas for electric power production. The project was designed to generate 48.5 MW of electric power using a GE LM6000 gas turbine. In a separate project, Pacific Energy Systems was retained by Salem Electric to perform due diligence on a proposed cattle manure digester, the gas from which would be used to generate electric power for Salem Electric.

RENEWABLE ENERGY - BIOGAS

Selected Projects

CLIENT	PROJECT
Mist Low BTU Gas Recovery	Oregon Natural Gas Development retained Pacific Energy Systems to evaluate the use of low-Btu natural gas deposits at the Mist gas field in northwest Oregon. The evaluation considered using the low-Btu gas as fuel for a gas turbine generator that delivered electricity to the local power grid. *John R. Martin, Project Manager*
Appin and Tower Power Plants	Pacific Energy Systems assisted GELLCO Infrastructure Services Pty, Ltd., with a technical review of the Appin and Tower electric-generating facilities. The plants are located in New South Wales, Australia, and are designed to burn coal seam gas in 94 one-megawatt, reciprocating, spark-ignited engine-generators. Pacific Energy Systems reviewed the plant design and construction, heat rate and output, and planned operation and maintenance costs. Recommendations were developed to assist GELLCO with its equity investment. *John R. Martin, Project Manager*

RENEWABLE ENERGY - WIND AND OTHER RENEWABLES

Selected Projects

CLIENT	PROJECT
City of Palo Alto Utilities Renewable Energy Program	Pacific Energy Systems evaluated 19 proposals submitted to the City of Palo Alto Utilities in response to its RFP for renewable energy projects. The proposals included two landfill-gas-to-energy projects, two wind projects, one food-waste digester-gas-to-energy project, and 14 photovoltaic projects. The projects were evaluated on the basis of financial viability, qualifications of the developer, reliability of the project, and other factors.
Stateline Wind Project	Pacific Energy Systems provided staff support to the Oregon Department of Energy in processing the application for site certificate for the Stateline Wind Project. The work included assisting with a review of the application, development of requests for additional information, and preparation of the draft proposed order for the site certificate. The Energy Facility Siting Council issued a site certificate for this facility. Subsequently, Pacific Energy Systems assisted the Oregon Department of Energy in processing an application for amendment of the approved site certificate. *John F. Larson, Project Manager*

RENEWABLE ENERGY - HYDROELECTRIC

Selected Projects

CLIENT	PROJECT
Auger Falls Hydroelectric Power	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Auger Falls Hydroelectric Project, located in the Twin Falls, Idaho. Pacific Energy Systems' reviewed the site hydrology, available design documents, equipment specifications, operation and maintenance plans, project permits, and the power purchase agreement. Based partly on Pacific Energy Systems' finding, GE Capital did not invest in this project. *John R. Martin, Project Manager*
Waialua Hydroelectric Project	GE Capital retained Pacific Energy Systems to conduct an independent evaluation of the Waialua Hydroelectric Project, located on the Island of Kauai, Hawaii. Pacific Energy Systems' reviewed the site hydrology, water use permits, available design documents, equipment specifications, operation and maintenance plans, and the power purchase agreement. Based partly on Pacific Energy Systems' finding's GE Capital did not invest in this project. *John R. Martin, Project Manager*

CLIENT	PROJECT
New Orleans Medical Center (NORMC) Thermal Plant	ABN AMRO Bank retained Pacific Energy Systems to provide the technical due diligence to support the acquisition financing of the NORMC Thermal Plant in New Orleans, Louisiana. The NORMC facilities have 11,000 tons of chilled water capacity, 120,000 pounds per hour of steam capacity, and standby electrical generating capacity of 8,000 kW. Energy services are provided to Charity Hospital, University Hospital, LSU Health Sciences, Tulane Medical School, and Delgado School of Nursing. *John R. Martin, Project Manager*
Northwind Aladdin Central Plant	ABN AMRO Bank retained Pacific Energy Systems to provide the technical due diligence to support the acquisition financing of the Aladdin Central Plant located at the Aladdin Hotel in Las Vegas, Nevada. The Central Plant has a capacity of 10,000 tons of chilling, 1,200 boiler horsepower for domestic hot water, and 5,250 kW of standby electrical power. Energy services are provided to the hotel, shopping mall, and theatre.
Chicago District Cooling System	ABN AMRO Bank retained Pacific Energy Systems to provide the technical due diligence to support the acquisition financing of the Chicago District Cooling System. The system included five chilled water plants in downtown Chicago with a total capacity of over 80,000 tons and the Midway Airport central chilled water and heating plant.

General Manager

EDUCATION

- M.S., Mechanical Engineering, University of California, Los Angeles
- B.S., Mechanical Engineering, University of California, Berkeley
- Additional graduate studies in management and economics

PROFESSIONAL REGISTRATION

Professional Engineer: California, Oregon, Washington, Maine

EXPERIENCE

Mr. Martin is the Principal of Pacific Energy Systems, Portland, Oregon. He is responsible for the general management and technical quality of all major projects performed by Pacific Energy Systems and also provides consulting services directly to clients.

Mr. Martin has been the Project Manager or the Principal-in-Charge of over 70 thermal energy power and cogeneration projects performed by Pacific Energy Systems in the last 18 years. These projects include responsibility as the Owner's Engineer/Project Manager and the Bank's Engineer and cover all phases of project development including feasibility assessment, site selection, financing, permitting, preliminary design, and project management during detailed design, construction, start-up and testing.

Mr. Martin participated in the preparation of a utility systems master plan for the Oregon Health & Sciences University (OHSU). The master plan includes requirements for steam, condensate, electrical distribution, city water, and wastewater. Mr. Martin was subsequently retained as the project manager to expand the OHSU Energy Management Center. The expansion included the installation of a new 60,000-pound-per-hour boiler and upgrades to the existing boiler, including a new burner. The plant auxiliary systems that were included upgraded the condensate and feedwater pumps, deaerator, natural gas and fuel oil supply systems, and controls.

Mr. Martin was subsequently retained to design the expansion of the steam system at the OHSU Energy Management Center. This expansion included the installation of a new boiler rated at 80,000-pounds-per-hour. The boiler included an economizer, one new feedwater pump, startup/tuning vent and muffler, stack, and associated piping.

Mr. Martin was the Owner's Project Manager for the development of a 43 MW peak power generating facility for the Franklin County Washington PUD and the Grays Harbor PUD. This included the specification and purchase of the gas turbine generators, CO and NO_X catalyst and the preparation of preliminary design. The preliminary design included heat and mass balances, air emissions, water balances, flow diagrams, and initial plant layouts to support project permits. Mr. Martin prepared specifications to select a design and construction management firm to build the facility. He represented the Owners through design, construction and start-up. Because of the critical need for electricity, the

schedule for this $34 million project from start of detailed design to initial operation was compressed to seven months.

Mr. Martin was the Owner's Engineer for the design and construction of a 27 MW simple cycle combustion turbine power plant for the Benton County Washington PUD. He was responsible for helping the PUD purchase the gas turbine generator and the preliminary design necessary to obtain land-use and air permits. The preliminary design included preparation of heat and mass balances, air emissions, water balances, flow diagrams, design criteria, and initial plant layouts. Mr. Martin prepared the Engineering, Procurement, and Construction (EPC) specifications that were used to select a turnkey EPC contractor. Pacific Energy Systems is providing engineering services to the Owner during the design and construction of the facility. Because of the critical need for electricity, the project schedule from the start of detailed design to initial operation is approximately six months.

Mr. Martin was the Owner's Engineer for United Technologies Energy Holdings (UTEH) for the design and construction of seven, 50 MW simple-cycle peak power generating plants in California. In this capacity, Mr. Martin prepared specification to retain a design, procurement, and construction management firm to develop the projects.

Mr. Martin was the Owner's Engineer for Avista-Steag for the development of a 250 MW gas turbine combined cycle at the Mint Farm Industrial Park in Longview, Washington. He was responsible for the preliminary design that included preparation of heat and mass balances, plant emissions, water balances, flow diagrams, and initial site arrangement drawings. The preliminary design documents were used for project permitting.

Mr. Martin was responsible for the preparation of the preliminary design for the Sempra Energy Resources' El Dorado Generating Station Phase II expansion southwest of Boulder City, Nevada. The facility is a 550 MW gas turbine combined-cycle power plant. The preliminary design included development of the plant design criteria, heat and mass balances, air emissions, water balances, flow diagrams, one-line diagrams, plant arrangements and elevation drawings, and plant descriptions, The preliminary design was prepared for both General Electric 7FA and Westinghouse/Siemens 501 gas turbine generators and was used to obtain the permits to construct the facility. The permits were successfully obtained. Mr. Martin was also retained by Sempra Energy Resources to prepare standard specifications for the engineering, procurement, and construction of a standard 550 MW combined cycle power plant.

Mr. Martin has been retained by two confidential clients to select sites for new electric power generating facilities in California, Oregon, and Washington. The site selection process included screening potential sites for the required infrastructure, land use and environmental characteristics necessary for new plant development.

Westinghouse Credit Corporation also retained Mr. Martin to perform a technical review of the Molokai Biomass Project in Hawaii. The review included observation and evaluation of plant performance tests and a technical review of the plant design and operation. The costs for producing the biomass fuels were also evaluated to better understand the cost of plant operation.

Both Westinghouse Credit Corporation and ABN AMRO Bank have retained Mr. Martin as independent engineer. As the independent engineer for the Ryegate and Soledad Biomass Projects, he was responsible for preparing a technical evaluation report before project financing was completed and, subsequently, for monitoring monthly construction progress. Monthly construction progress reports were prepared together with monthly certificates of completion. Mr. Martin also conducted an operations and maintenance audit of the Soledad Biomass Power Plant, including an independent review of the cost of producing the biomass fuel.

Mr. Martin was the project manager for the design and construction of two hydroelectric power plants (24 MW and 12 MW) that were built for the City of Portland. He also performed project due diligence reviews for the Auger Falls Hydroelectric Power Project in Idaho and the Wailua Hydroelectric Project in Hawaii.

He performed a Best Available Control Technology (BACT) evaluation that considered using emulsified No. 2 fuel oil and water in medium-speed diesel engines at the Maui Electric Company's (MECO) Maalaea Power Plant. In addition, he was responsible for evaluating cogeneration opportunities for a food processing plant within MECO's service area.

Mr. Martin was project manager for the conceptual design of renewable energy systems to be demonstrated at the Natural Energy Laboratory of Hawaii. These renewable systems include solar thermal collection and storage, absorption refrigeration, and low-temperature desalination.

He assisted a client with negotiations in China for the turnkey development of small (12-megawatt), coal-fired electric power plants. Negotiations involved representatives of the local electric utility, the Bank of China, county officials, and representatives of the Chinese trading company.

In the early 1970's, when he was employed by Pacific Power & Light Company, Mr. Martin was involved in project engineering and project management of new power generating facilities. He was project engineer for Pacific Power's Jim Bridger Project in Rock Springs, Wyoming, and was responsible for coordinating engineering, equipment procurement, and construction package preparation with the architect/engineer, the Pacific Power home office, and the field construction office. In addition, he was responsible for monitoring engineering budgets and schedules to meet project cost and schedule requirements. While at Pacific Power, Mr. Martin was also involved in the design of betterment projects for steam electric generating plants, including scrubber retrofit studies for the Jim Bridger plant. He assisted in the development of standard criteria for the design of coal-fired generating facilities, and he recommended an information management system for storage and retrieval of drawings and data on new plant design projects.

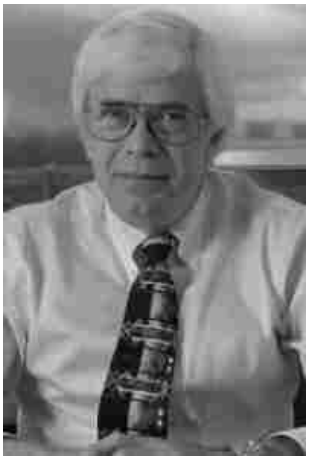
Mr. Martin also served as an engineer for the Bechtel Power Corporation. He was involved in mechanical group supervision of the Taiwan Power Company's Nuclear Units 3 and 4 and Units 5 and 6 projects, and was responsible for engineering planning and scheduling, budget preparation, specifications, bid evaluations, equipment sizing, and design calculations. He supervised preliminary design studies and technical administration of the turbine-generator contract for Gulf States Utilities' Blue Hills Project and preliminary plant design studies for the German utility RWE.

He has taught courses in engineering thermodynamics and thermal systems design at Portland State University.

PRESENTATIONS AND PUBLICATIONS

- “Comparison of High-Efficiency Distributed Cogeneration and Large Combined-Cycle Power Generation”, presented to ASME/IGTI Turbo Expo, Atlanta, Georgia, June 16, 2003.
- “Siting Power Plants in the Pacific Northwest,” John R. Martin, World-Generation, September/October 2002.
- “Industrial Cogeneration – A Case Study,” presented to the Distributed Power Conference, Oregon Section, ASME International, April 2001.
- "The Economics of New Gas Turbine Resources in the Pacific Northwest," John R. Martin and F. Duncan McCaig, International Gas Turbine Institute, Cogen Turbo Power '94 Conference.
- "Evaluation of Horizontal Trenches for Landfill Gas Collection at Rossmans Landfill," Mark Fujii and John Martin, Proceedings from GRCDA 8th International Landfill Gas Symposium, April 9, 1985.
- "Fundamentals of Cogeneration," presented to Symposium on Cogeneration at the University of Florida, Gainesville, March 4, 1983.
- "Innovative Thermal Energy Systems," presented to Oregon Section of ASME, January 10, 1983.
- "Pacemaking Retrofits/Bull Run Hydroelectric Facility," John R. Martin, *Electric Utility. . .1982 Generation Planbook (Power Magazine)*.

Project Permitting



EDUCATION

- J.D., Northwestern School of Law of Lewis and Clark College
- B.A., Political Science, Portland State University
- Certificate, Intensive Russian Language Course, Indiana University

PROFESSIONAL REGISTRATION

- Oregon State Bar

EXPERIENCE

Mr. Larson is a licensed attorney whose experience in energy projects spans more than 30 years. His experience includes acquiring real property for power plant development, coordinating the permitting of major surface coal mines in Montana and Wyoming, and managing or auditing the permitting of geothermal, biomass, coal-fired, and gas-fired independent power projects. More than once, he has been credited with developing highly creative solutions to difficult permitting problems.

Mr. Larson has assisted the Oregon Department of Energy with the review of numerous energy facility site certificate applications. He also served as project manager providing staff support to the Oregon Energy Facility Siting Task Force in 1996.

As Manager of Legal & Regulatory Affairs for NERCO-Pacific Generation Services, a PacifiCorp affiliate, Mr. Larson was responsible for ensuring environmental compliance of projects proposed for development and auditing environmental compliance of projects being considered for investment. He has interacted with developers, regulators, lenders, and suppliers, often serving as a mediator among parties with conflicting interests. He has proven himself capable of producing a realistic appraisal of the likelihood of acquiring all necessary permits prior to project development and successfully complying with those permits during project operations.

During the 1997 session of the Oregon Legislative Assembly, Mr. Larson served as Committee Administrator to the House Committee on Power Deregulation.

Mr. Larson has applied his listening skills to forge strong bonds with members of other disciplines and has frequently served as a facilitator in resolving troublesome interdisciplinary misunderstandings. Though difficult to quantify, this skill has made him an invaluable participant in the processes of permit application preparation, complex closings, and difficult negotiations.

Director, Energy Policy Development

EDUCATION

Stewart-Smith has a bachelor's degree in chemistry ('74) from Lewis and Clark College. His master's degree is in public administration ('85) with an emphasis in public health from Portland State University.

EXPERIENCE

Stewart-Smith was with the Oregon Department of Energy for over 20 years, becoming the Energy Resource Division Administrator in August 1989, and Assistant Director in 2003.

In addition, Stewart-Smith was Secretary of the Oregon Energy Facility Siting Council since 1989, a seven-member citizen board charged with making consolidated siting decisions under Oregon law. He oversaw the Department's programs in large energy facility siting review, radioactive materials transport and disposal, renewable energy resource development and energy resource policy issues. Stewart-Smith was the Oregon Governor’s liaison to the U.S. Nuclear Regulatory Commission from 1989 to 2005, and Oregon’s delegate to the NW Interstate Low Level Radioactive Waste Compact from 1985 to 2005.

Major energy facilities reviewed under Stewart-Smith’s tenure include reviewing 11 new power plant proposals, significant additions to Oregon’s electric transmission and natural gas infrastructure and overseeing several low level radioactive waste site clean-ups. His career began in 1974 as an analytical radiochemist, monitoring the environment surrounding the new Trojan Nuclear Plant. In early 2005, his division approved the final decommissioning of the Trojan nuclear power plant.

Stewart-Smith was also a health physicist and manager of Oregon's radiation accident response team for part of the 10+ years he worked for the Oregon Health Division. The Health Division regulates the use of radioactive materials in Oregon under delegation from the U.S. NRC.

Dave and his wife Carol have been married 28 years and have two children, Kathryn, 19 and Mart, 16. He is a Boy Scout volunteer and church youth group leader. He loves to hike, collect slide rules and old cameras.

Project Engineer

EDUCATION

- B.S.M.E., Brigham Young University

PROFESSIONAL REGISTRATION

Professional Engineer: - Oregon and Washington
Environmental - Oregon

EXPERIENCE

Mr. Taylor is a mechanical engineer with a broad range of experience in the natural gas industry, having spent 28 years with Northwest Natural Gas where he was responsible for the design, construction, and operation of gas distribution and transmission systems. Mr. Taylor modeled gas systems operations and was responsible for the design and construction of pressure regulating stations. He served as a project engineer on special pipeline and plant projects and as quality control engineer specifying material and components. He also supervised the code compliance group performing pipeline inspection services over a system with 12,000 miles of underground piping and over 400,000 customers.

Projects have included the design and construction of city gate facilities for receiving gas from transmission lines, and the construction of several major high-pressure feeder lines to 12" diameter to accommodate large gas supplies to the high-tech industry. Mr. Taylor has also designed metering and regulation facilities for the electronic industries.

Mr. Taylor directed the upgrade of 60 miles of high-pressure transmission line on the Northwest Natural Gas North Coast Feeder between Sauvie Island and Warrenton, Oregon, from 350 psig to 575 psig. He was responsible for the design and construction of 2.5 miles of 12-inch diameter feeder at Lacamas Shores to serve an electronic chip manufacturer. Mr. Taylor managed design and construction of 2.5 miles of 10-inch diameter high-pressure feeder main to serve two electronic plants in Gresham, and the design and construction of 2 miles of 8-inch pressure feeder main and a new gate station for the city of Sandy, Oregon. Mr. Taylor was responsible for the design and construction of new gate stations at Johnson Creek in Gresham, Oregon, and Battle Ground, Washington.

Mr. Taylor updated procedural specifications for hydrostatic testing of transmission line, the development of procedures, and the fabrication of pig launching equipment for line dry outs. He has experience with the traditional pipeline construction methods and development of standards for the more recent methods in pipeline installation, including Horizontal Directional Drilling (HDD) for steel and poly pipe, and the plowing and planting of poly pipe.

He assisted with special customer requirements including consulting on specific problems on emissions monitoring, and providing DEQ reporting systems for boiler operations. As part of pipeline inspection, Mr. Taylor is qualified in gas chromatography for the identification of soil gasses and is qualified to provide operator training and certification services to private operators having a thorough knowledge of the codes governing the transport of natural gas, including DOT Parts 191 and 192, ASME B31.8 and B31.3, and NFPA 54.

Project Engineer

EDUCATION

- B.S., Mechanical Engineering, Darmstadt, Germany
- Additional graduate studies in economics and project management

PROFESSIONAL REGISTRATION

- Professional Engineer: New York, Oregon, Virginia

EXPERIENCE

Mr. Werber has more than thirty-seven years of mechanical engineering experience in the design, construction, startup, and operation of power plants, including gas-turbine, coal-fired, and nuclear plants. He has conducted operation and maintenance audits, and he has observed the startup and performance testing of a biomass power plant. He has also performed technical reviews for financial institutions.

He also monitored the construction completion, witnessed and evaluated the performance testing of several cogeneration and independent power projects.

Mr. Werber managed the mechanical engineering at Pacific Power & Light Co., where he provided engineering services to all thermal plants in the Pacific Power system. He directed the conceptual design and feasibility studies for new fossil-fuel plants and plant improvement projects. His department provided consulting services for PacifiCorp subsidiaries (NERCO, Pacific Corporation Finance) in the area of western coal combustion and cogeneration feasibility studies.

Mr. Werber was involved in field assignments as plant engineer at a 750-MW, coal-fired station. He was responsible for all plant engineering activities including plant performance, chemistry, fuel, and environmental activities. In addition, the preparation and justification of the capital and operations and maintenance budget were the responsibilities of his department.

He also served as startup engineer for the 850-MW, J. A. Fitzpatrick Nuclear Power Plant, the startup and preliminary operation activities at the Surry Nuclear Power Plant, and several other coal-and oil-fired stations. Mr. Werber worked in the design of nuclear safeguard systems and related equipment.

Mr. Werber performed conceptual design, engineering, and startup of support systems for a 30-MW, heavy water, gas-cooled reactor. His experience includes stress and flexibility analyses on power piping for pulp and paper boilers, and specifications for pipe hangers and supports.