

**Resume of Philip Hayet, Hayet Power Systems Consulting**

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**EDUCATION/CERTIFICATION**

Registered Professional Engineer in the State of Georgia, 1987  
M.S., Electrical Engineering, Georgia Institute of Technology, 1980  
B.S., Electrical Engineering, Purdue University, 1979  
Cooperative Education Certificate, Purdue University, 1979  
Member National Professional Engineering Society

**EXPERIENCE**

Mr. Hayet has provided consulting services to Public Utility Commissions, State Energy Offices, Electric Utilities, Global Power Developers, and Industrial Companies for the past eighteen years. Mr. Hayet's expertise covers a number of areas including utility system operations, market price forecasting, expansion planning, transmission planning, economic analysis and financial planning. Since the end of 1995, Mr. Hayet has managed his own utility consulting firm providing utility planning services. Mr. Hayet's practice serves the needs of customers in the United States and internationally, including customers in Australia, Japan, Singapore, the United Kingdom, and Vietnam. In 2000, Mr. Hayet joined the consulting firm of J. Kennedy & Associates, on a part-time basis to provide regulatory support for projects requiring utility resource planning analysis and modeling expertise.

Prior to starting his own firm, Mr. Hayet worked for fifteen years at Energy Management Associates, now NewEnergy Associates, where he provided consulting services and client service support using system planning software models (PROMOD IV and PROSCREEN II). Clients have included various electric utilities and governmental agencies, as well as, private industry. Mr. Hayet helped to design some of the features that exist within the PROMOD IV and PROSCREEN II systems. For example, he played a prominent role in designing and testing the competitive market modeling features that were added to the PROSCREEN System, in anticipation of deregulation beginning to take root in various markets around the world.

Mr. Hayet has conducted numerous consulting studies in the areas of Electric Market Price Forecasting, Generating Unit Cost/Benefit Analysis, Integrated Resource Planning, Demand-Side Management, Load Forecasting, Rate Case Analysis and Regulatory Support. A list of recent projects is included below.

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**SPECIFIC EXPERIENCE**

**1996 to  
Present**

**Hayet Power Systems Consulting, Atlanta, GA**

- Have been providing on-going support concerning PacifiCorp's Schedule 37 and Schedule 38 proceedings.
- Provided regulatory support to the Utah Committee of Consumer service regarding PacifiCorp's Certificate of Convenience and Necessity for its Currant Creek CCCT unit application
- Provided regulatory support to the Utah Committee of Consumer Services regarding PacifiCorp's Utah 2003 General Rate Case Docket # 03-2035-02
- Worked on behalf of the Oregon Public Utility Commission to Audit PacifiCorp's Net Power Costs per a Settlement Agreement accepted by the Public Utility Commission of Oregon in its Order No. 01-787.
- Worked on behalf of the Utah Committee of Consumer Services to provide guidance and assist in the analysis of PacifiCorp's 2003 Integrated Resource Plan.
- Worked on behalf of the Utah Committee of Consumer Services to provide guidance and assist in the analysis of PacifiCorp's restructuring proposals.
- Testified in front of the Utah Public Service Commission in regards to PacifiCorp's Utah General Rate Case Docket # 010-035-010
- Submitted an expert report in August 2002 in the United States District Court for the Middle District of North Carolina in the Civil Action No. 1:00 CV 1262, United States v. Duke Energy Corporation. The case concerned compliance with the 1977 Clean Air Act and the report concerned generation resource planning and production cost modeling issues.
- Provided general rate case assistance in other hearings in Oregon, Washington and Wyoming
- Modeled the Singapore Power Electricity System and analyzed the benefits of dispatching a new oil-fired unit within the system.
- Modeled the Australian National Energy Market to develop market based energy price forecasts on behalf of an Independent Power Producer in Australia
- Analyzed the benefit of purchasing existing gas-fired steam turbine units within the Australian market

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- Developed market price forecasts for South Australia as part of the evaluation of a new gas fired combined cycle unit
- Modeled the Vietnam Electricity System as part of a project to develop Least Cost Expansion plans for Vietnam
- Assisted in the evaluation of a large gas-fired combined cycle plant in Vietnam
- Assisted in the development of Market Price Forecasts in several regions of the US. These forecasts were used as the basis for stranded cost estimates, which were filed in testimony in a number of jurisdictions across the country.
- Helped to analyze the rate structure and develop an electricity price forecast for the Metropolitan Atlanta Rapid Transit Authority (MARTA) in Atlanta, Georgia
- Testified regarding the reasonableness of PacifiCorp's determination of Net Power Cost as part of a rate case proceeding in Utah
- Provided rate case support opposing PacifiCorp's rate increases in both Oregon and Washington State. Performed alternative power cost modeling using software simulations
- Critiqued the IRP filings of 5 utilities in South Carolina on behalf of the South Carolina State Energy Office
- Conducted research regarding ISO Tariffs and Operations for the PJM Power Pool, the California ISO, and the Midwest ISO on behalf of a Japanese Research Organizations
- Performed research on numerous electric utility issues for 3 Japanese research organizations. This was primarily related to deregulation issues in the US in anticipation of deregulation being introduced in Japan.

**Summer 2000**

**to present**

**J. Kennedy & Associates, Atlanta, GA**

- Currently providing regulatory support on behalf of the Louisiana Public Service Commission's FERC complaint regarding power purchase contracts in FERC Docket No. ER03-753-000.
- Currently providing regulatory support on behalf of the Louisiana Public Service Commission Staff in a retail proceeding evaluating the benefits of possibly retiring some of Entergy's gas-fired units. Docket No. U-27136 (Subdocket A).

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- In 2002 – 2003, provided regulatory support on behalf of the Louisiana Public Service Commission’s FERC complaint regarding cost allocation issues between the Entergy Operating Companies in the FERC Docket No. EL01-88-000.
- In 2002 – 2003, provided regulatory support on behalf of the Louisiana Public Service Commission Staff in a retail proceeding concerning Entergy’s billing practices. Docket No. U-25888
- In 2000 – 2001, provided regulatory support on behalf of the Louisiana Public Service Commission’s intervention in Entergy’s proposed System Agreement modifications in the FERC Docket No. ER00-2854-000.

**1991 to  
1996:**

**EDS Utilities Division, Atlanta, GA  
Lead Consultant, PROSCREEN Department**

- Managed a client services software team that supported approximately 75 users of the PROSCREEN II electric utility strategic planning software.
- Participated in the development of PROSCREEN’s competitive market modeling features and the Network Economy Interchange Module
- Provided client management direction and support, and developed new consulting business opportunities.
- Performed system planning consulting studies including integrated resource planning, DSM analysis, marketing profitability studies, optimal reserve margin analyses, etc.
- Based on experience with PROMOD IV, converted numerous PROMOD IV databases to PROSCREEN, and performed benchmark analyses of the two models.

**1988 to  
1991:**

**Energy Management Associates (EMA), Atlanta, GA  
Manager, Production Analysis Department**

- Served as Project Manager of a database modeling effort to create an integrated utility operations and generation planning database. Database items were automatically fed into PROMOD IV.
- Supervised and directed a staff of five software developers working with a 4GL database programming language.

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- Interfaced with clients to determine system software specifications, and provide ongoing client training and support

**1980 to 1988:** **Energy Management Associates (EMA), Atlanta, GA**  
**Senior Consultant, PROMOD IV Department**

- Provided client service support to EMA's base of over 70 electric utility customers using the PROMOD IV probabilistic production cost simulation software.
- Provided consulting services in a number of areas including generation resource planning, regulatory support, and benchmarking.

### **SELECTED CONSULTING ASSIGNMENTS**

#### **Singapore Power Plant Investment Analysis**

As part of the financial and economic evaluation of a potential power plant investment in Singapore, an electricity market price forecast of the Singapore System was conducted. The Singapore system was modeled using the PROSCREEN II simulation software and market based revenues for the new power plant were determined. Numerous sensitivity cases were performed to analyze the investment under different uncertainties.

#### **Australia Competitive Market Assessment**

The Southeastern part of Australia has evolved into a deregulated competitive power market. New evaluation tools have been developed to analyze these types of markets, including the Network Economy Model within the PROSCREEN software modeling system. Under an engagement with BHP Power, one of the largest industrial concerns in Australia, the entire Australian competitive market was modeled in order to forecast energy prices. The primary objective was to determine the revenue potential of different power plant alternatives as part of evaluating the power plant's potential rate of return on investment.

#### **Vietnam BOT Combined Cycle Project**

On another engagement with BHP Power, conducted an analysis of the Vietnamese Power System to determine the minimum requirements necessary to meet the country's power needs over both a short and long term horizon. The major question investigated was how a new 650 MW Combined Cycle unit would be dispatched within the Vietnamese System. The results of this evaluation were used as part of negotiations of a power purchase agreement with the Vietnamese government.

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**Analysis of the Natural Gas Market Opportunity in Vietnam**

On behalf of a large international Oil and Gas Producer, conducted an investigation of the potential demand for natural gas within the Vietnamese electric utility industry. A model of the Vietnamese power system was built and numerous scenarios for gas sales were considered. The results of the analysis were used in consideration of going forward with an offshore drilling operation and building a pipeline to supply natural gas to potential future combined cycle power plants.

**PacifiCorp Net Power Cost Analysis – Utah**

Conducted an analysis for The Utah Department of Public Service and the Utah Committee for Consumer Services to analyze the reasonableness of PacifiCorp's development of Net Power Costs as part of Utah Power and Light's 1998 rate case. Based on an alternative software modeling of the PacifiCorp System, it was determined that PacifiCorp had been overstating Net Power Costs and a settlement was reached on this aspect of the rate case. Virtually all adjustments determined as part of the analysis were accepted in the Settlement agreement.

**PacifiCorp Net Power Cost Analysis – Oregon and Washington**

On behalf of an industrial consumer group in Oregon and Washington State, provided rate case support in opposition to PacifiCorp's rate case filing. Concentrated on Net Power Cost issues. This case settled prior to going to hearing.

**South Carolina Integrated Resource Planning Assessment**

The State Energy Office of South Carolina is mandated to analyze the IRP filings of the utilities in the state, yet they had never done this since the IRP legislation passed in 1992. The first objective of the project was to determine if the utilities in the state were doing an adequate job planning resource additions to meet future load requirements. The second objective was to consider the role of Integrated Resource Planning in a deregulated environment. Numerous recommendations were made regarding the Integrated Resource Planning process that are being considered as part of the on-going process to deregulate the South Carolina electric utility industry.

**Analysis of the Deregulated California Market for Kansai Electric**

Recognizing that in the near future the Japanese utility industry will become deregulated, Kansai Electric wanted to gain a better understanding of the California market. Mr. Hayet analyzed how the California system works and wrote a detailed report of the analysis. Kansai plans to use this information in formulating their position regarding deregulation.

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### **Tokyo Electric Power Company (TEPCO) Survey**

In 1995, the Japanese Government signaled their intent to open up the electric utility industry to Independent Power Producers. Consequently, TEPCO wanted to have a better understanding of how US utilities developed avoided capacity and energy payments and the characteristics of purchase power contracts. A survey of 6 US electric utilities was conducted, and a report of the findings was presented to TEPCO in Japan.

### **Survey of Typical Utility Operations for Kansai Electric**

The Japanese Utility Industry has been evolving and the government is investigating various forms of legislation to open transmission access similar to the way that FERC required open access in the United States. As a result, Kansai Electric requested a survey of certain operational utility practices in existence in the US today and how they would be modified in the future under a deregulated environment. More specifically, Kansai was concerned about coordination issues among utilities and independent power producers. Two US utilities were surveyed and a report was written and provided to Kansai Electric.

### **Researched PJM ISO, California ISO and Midwest ISO for Mitsubishi of Japan**

Utility planners in Japan, like to keep a close watch on electric industry activities here in the US. Typically, regulatory practices in Japan are similar to those followed in the US, although they trail the US by a few years. This project involved a study of transmission, generation planning and generation operation practices in the markets listed above. Issues researched were generation and transmission expansion criteria, ancillary services, FERC Tariffs, benefits of ISO structures, and others.

### **Delmarva Power Corporation IRP and Demand Side Management Analysis**

This consulting study was performed in order to satisfy multiple regulatory filing requirements that Delmarva had to meet. The study was conducted by performing a load forecast and load shape analysis, a DSM cost/benefit evaluation, and an Integrated Resource Expansion Plan Study. Results of the study helped to confirm the fact that many of Delmarva's DSM programs were simply not cost effective and provided the basis for canceling the uneconomic DSM programs, and re-focused attention on those programs deemed to be economically feasible.

### **Florida Power Corporation IRP and Demand Side Management Analysis**

The Florida PSC held DSM Goals Hearings, which required all utilities in the state of Florida to file DSM goals, whose benefits had to be justified in the context of an integrated resource plan analysis. As part of the docket, the commission wanted to determine if they

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should institute an annual statewide IRP filing requirement. Assistance was provided to FPC to use PROSCREEN to perform the IRP study and to analyze over 150 different potential DSM measures. The results were then submitted as part of the filing.

**City of Austin Alternative Resource Analysis**

Evaluated alternative resource expansion plans looking at non-traditional technologies such as wind, biomass, small head hydro, photovoltaics, etc. This project was performed at the request of the city council whose citizenry desired to pull out of the South Texas Nuclear Project and to find alternative power generation technologies. This project was performed using the PROMOD IV software.

**Duquesne Power and Light Company - Marketing Profitability Analysis**

Used PROMOD IV, to assess the benefits of various commercial and industrial marketing programs. Conducted an optimal load shape analysis study in order to narrow down the list of potential marketing programs. This project was ahead of its time, before it became popular to perform detailed marketing program analyses.

**Various New York Power Pool System Planning Consulting Assignments**

Worked on projects for all 7 investor owned electric utilities, including 9 Mile Point 2 Cancellation Studies, Shoreham Cancellation Studies, 9 Mile Point 1 Power Replacement Cost Analyses, New York Power Pool Resource Planning Studies, Marginal Cost Analyses, Long Run Avoided Cost Studies, Co-generation Negotiation, Litigation Support, and Regulatory Support.

**Kansas City Power and Light Company Benchmark Study**

Kansas City Power and Light Company acquired PROMOD IV for their resource planning department to study issues including various evaluations of their Wolf Creek Nuclear Power Plant. Assisted in the development of a detailed benchmark of PROMOD to actual historical company operation results.

**PUBLICATIONS**

**Authored** “The Developing Vietnamese Power System”, which will appear in an upcoming addition of Power Value Magazine

**Co-Authored** “The European Electricity Market”, which appeared in the June 2000 edition of Hart’s Energy Markets



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**Authored** “Singapore’s Developing Power Market”, which appeared in the July/August 1999 edition of Power Value Magazine

**Co-authored** “The New Energy Services Industry – Part 1”, which appeared in the January/February 1999 edition of Power Value Magazine.

**Co-authored and Presented** “Evaluation of a Large Number of Demand-Side Measures in the IRP Process: Florida Power Corporation’s Experience”, Presented at the 3rd International Energy and DSM Conference, Vancouver British Columbia, November 1994

**Co-authored** “Impact of DSM Program on Delmarva’s Integrated Resource Plan”, Published in the 4th International Energy and DSM Conference Proceedings, held in Berlin, Germany, 1995

#### **TESTIMONY AND EXPERT WITNESS APPEARANCES**

Testified in July 2003 in front of FERC in support of the Louisiana Public Service Commission’s complaint regarding cost allocation issues amongst the Entergy Operating Companies in the FERC Docket Number EL01-88-000.

Submitted an expert report in August 2002 in the United States District Court for the Middle District of North Carolina in the Civil Action No. 1:00 CV 1262, United States v. Duke Energy Corporation.

Testified in July 2002 on behalf of the Utah committee for consumer services regarding a special contract for an industrial consumer in support of a settlement agreement in a PacifiCorp Utah proceeding in Docket Number 02-035-02.

Provided testimony in the Fall of 2001 in front of FERC on behalf of the Louisiana Public Service Commission’s intervention in Entergy’s proposed System Agreement modifications in the FERC Docket No. ER00-2854-000.

Testified in July 2001 regarding the reasonableness of PacifiCorp’s determination of Utah jurisdictional Net Power Costs in PacifiCorp’s General Rate Case Docket 01-035-01

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Testified in September 1998 regarding the reasonableness of PacifiCorp's determination of Utah jurisdictional Net Power Costs as part of a Settlement Proceeding in PacifiCorp's rate case Docket Number 97-035-01.