**Mr. YAVUZ ARIK**5112 Norbeck Road, Rockville MD 20853
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**AREAS OF EXPERTISE**

Over 25 years of experience in energy consulting, rates, and regulatory affairs management, developing solutions using quantitative modeling, energy economics and information systems, and preparation of all necessary reports and filings. Experience in the areas of:

* Project Management
* Economic strategy development, modeling and problem solving
* Demand forecasting, load research and portfolio optimization based on Monte Carlo scenarios
* Resource planning and resource optimization modeling
* Monte Carlo methods, including weather distribution simulation
* Development of economic/pricing models, (e.g. investment, natural gas pricing, line extension models)
* Database systems and database design
* Document and data management automation systems
* Risk assessment evaluation
* Mergers and acquisitions
* Costing and rate design
* Supply-side and demand-side planning
* Auditing
* Litigation support and conflict resolution

**EXPERIENCE**

2000 – Present **Energytools LLC (www.energytoolsllc.com)**

Senior Partner

* **AZ Public Service Commission**: Audited Arizona Public Service regarding damages to customers from improper billing and rate recommendations
	+ - Worked directly with leading APS directors and commission staff to collect all necessary facts and data.
		- Assessed refunds and damages due to APS customers.
		- Analyzed hundreds of thousands of billing records, and recreated the company’s billing methodology to infer potential damages to customers from improper billing and rate recommendations.
		- Publicly controversial case was settled and closed for **$24M** after issue of report.
* **BOTAS (Turkish Natural Gas Pipeline Company)**: Working directly with the president, VPs and directors of BOTAS, managed team to develop a **Pipeline Pricing Model** for Turkish Natural Gas Pipeline System, involving a 2-part (spoke/distance – based and wheel/postage stamp municipal central distribution network) tariff structure, which was referred to as a “TEPE” (Transmission Entry/Postage Exit) tariff structure based on all current system costs, projected system growth, and forecasted demand. The development of this model led beyond the original contract to include further training of BOTAS staff on-site and in the US. The model involved guiding **$1,5B** of expansion investment by the pipeline company at that time.
* Created and managed development of **Data Request Easy Access and Management (DREAM) System**, which is a web-based document management system for utilities. Started as an installed server service, and transformed into a web-based service currently used by several utilities including National Grid and Liberty Utilities. This system allows its users to manage all information exchanged with FERC and public service commissions in multiple jurisdictions. This system is especially valuable to utilities:
	+ The DREAM System saves its utility clients **millions of dollars** in legal/paralegal costs, regulatory information. preparation and filing costs, comprehensive data tracking, data request(DR)/interrogatory(IR) processing and storage
	to keep a consistent archive of information related to all rate cases, testimony, and filings, to allow fast retrieval of information relevant to a particular topic and ensure consistency of responses provided, and to manage responses to the public service commission within the company by routing, enforcing proper legal and management review and ensure accuracy in timely responses and content provided.
* Managed the development of the **Resource Optimizing Gas Model (ROGM)**, a comprehensive gas optimization model to provide in-depth analysis for integrated least cost planning, demand-side management program evaluation, rate cases, marginal cost analysis, strategic resource planning, cost-of-service studies and unbundling studies. Some of the studies based on this model have been filed with public service commissions. This model is used to analyze tradeoffs between reserve requirements, cost of gas supply, and resource acquisition and utilization for gas distribution companies by formulating the optimal usage mix of available resources. Justified savings of **millions of dollars** for user clients both in resource optimization, and auditing of resources purchased.
* Created **Forecasting and Monte Carlo Simulation Models** for gas and electric utilities and third-party marketers
	+ The system uses load research data for customer groups along with weather data and monthly historical demand data to develop Monte Carlo simulations of system demand and demand variability by weather and other factors.
	+ This model can be used in tandem with ROGM to develop short-term and long-term supply planning and portfolio analysis. When used in tandem with a risk analysis model, the model can evaluate financial risk probabilities and total risk exposure.
	+ **Monte Carlo analysis allows calculation of financial exposure in millions of dollars, derivation of probabilities and planning for all scenarios.**
* Created **Line Extension Models**: Utilities often consider extending their service to new development areas, and the economic evaluation of such extensions can be performed using this model. This allows utilities to comprehensively plan to meet sales growth and **identify and prioritize higher income generating projects**.
* Designed **Tariff Document Management** **System**: Regulated utilities must prepare their tariffs and submit these documents for approval within the company and subsequently with their public service commission. This system provides a uniform document editing and review system to ensure ease of review and uniformity of submitted tariffs.

**Load Forecasting**Managed the preparation of load forecasting studies for electric and natural gas utilities, including end-use models. These studies involve Monte Carlo simulations and time-series analysis to model probabilistic distributions of various scenarios. This work has also included the development of elasticity of demand measures that have been used for attrition adjustments and revenue requirement reconciliation. Representative clients include:

* Central Louisiana Electric Company
* Kansas Gas Service
* Washington Gas
* Washington Gas Energy Services

**Energy Company Clientele of Energytools LLC.:**

* National Grid
* Westar
* Liberty Utilities
* Washington Gas
* Washington Gas Energy Services
* UGI Utilities
* Pennsylvania Power and Light
* Kansas Gas Service
* BOTAŞ Petroleum Pipeline Corporation (via Siemens/Pace Global)

**Public Service Commission Clientele of Energytools LLC.:**

* Arizona Corporate Commission
* Audited Arizona Public Service
* Public Utilities Commission of Ohio (via Liberty Consulting Group)
* Audited Cincinnati Gas and Electric Company
* Audited Vectren Energy Delivery of Ohio
* National Rural Electric Cooperative Association
* New Jersey Board of Public Utilities (via Liberty Consulting Group)
* New Hampshire Public Utilities Commission (via Liberty Consulting Group)

**Regulatory Change Management**

Assisted both electric and natural gas utilities as they prepare to operate in a restructured industry. This work has involved the development of unbundled cost of service studies (i.e. separation of transmission, distribution and energy costs); the development of strategies that will allow companies to prosper in a restructured industry; retail access program development, implementation, and evaluation; and the development of innovative ratemaking approaches to accompany changes in the regulatory structure. Representative clients include:

* + BOTAŞ Petroleum Pipeline Corporation
	+ Kansas Corporation Commission
	+ Electric Cooperatives' Association
	+ Central Louisiana Electric Company
	+ Washington Gas
	+ Kansas Gas Service

**Management Audits**

Often as part of a larger audit team, directly involved in management audits of multiple utilities in the US, including in-depth interviews, preparation of data requests, data analysis and report writing. The focus of efforts has been in the areas of load forecasting, demand- and supply-side planning, and integrated resource planning. Demand-side planning involves the forecasting of future demands; the design, development, implementation, and evaluation of demand side management programs; the determination of future supply side costs; and the integration of cost-effective demand side management programs into an Integrated Least Cost Resource Plan. Provided testimony in defense of utilities as well as utility customers on behalf of PSCs. Representative commission/utility clients are as follows:

* Arizona Corporate Commission/Arizona Public Service
* Kentucky Public Service Commission/Louisville Gas & Electric
* Kentucky Public Service Commission/Columbia Gas of Kentucky-NiSource
* Kentucky Public Service Commission/Delta Natural Gas Company
* Kentucky Public Service Commission/ULHP-Cinergy
* Kentucky Public Service Commission/Western Kentucky Gas-Atmos
* Public Utilities Commission of Ohio/Vectren Energy Delivery of Ohio
* Various other utilities in OH, NJ and NH on behalf of State PSCs

**Supply Side Planning**

Managed several supply-side planning projects, involving the evaluation of short-term and long-term gas supply and resource plans using ROGM, working directly with utilities for strategy development, portfolio refinement and optimization. These plans often include load forecasting, calculation of avoided costs, strategic resource acquisition, supply related contract evaluation, determination of optimal sizes and types of capacity to install, determination of production costs including and excluding the resource, and overall assessment of system changes based on design changes, constraint changes and contractual changes.

**Mergers and Acquisitions**

Involved in a few merger and acquisition studies throughout career. Several of these were conducted as confidential studies and cannot be listed. Those in which involvement was publicly known are:

* ONEOK, Inc./Southwest Gas Corporation
* Western Resources

**Costing and Rate Design Analysis**

Used ROGM to conduct marginal cost, cost of service, gas supply and resource planning studies for utility clients. Various studies have been used for filings with public service commissions and for integrated resource planning. Performed specific costing and rate design studies for the following companies:

* Western Resources
* Kansas Gas Service Company
* Central Louisiana Electric Company
* Washington Gas

1998 – 2002 **Vim Consulting, Inc.**

President

* Worked on three main projects for Behavior and Health Research, Inc.:
* Managed a team to create an automated telephone survey and database system (IVR) from scratch to conduct and manage surveys for a project with the National Institute of Child Health and Human Development (NICHD).
* Managed the creation of a grants database system for the National Institute on Drug Abuse (NIDA) to track funding and post-award research over 100 projects.
* Originally started as a branch project, it was upgraded for division-wide access and web-enabled access.
* NIDA tracked $400 million in grants and research funding in various institutions using this system.
* Managed the creation of a Clinical Trial Management System (CTMS) to fully track, digitally record and coordinate clinical study scheduling and results, ensuring strict adherence to trial protocols, budgeting, employing audit trails and security in data management in terms of data privacy, encryption, and archiving.
* The 1st automated clinical trial of BHR was for the evaluation of Eli Lilly’s Prozac on ADHD in kids.

1995 – 1998 **Corporate Economic Strategies**

Consultant

* Began consulting Washington Gas under the rates and regulatory affairs arm of business, began development of forecasting, planning and portfolio optimization models for various clients of the firm.

**EDUCATION**

1993 – 1995 Georgetown University, Washington DC

MA, Economics, *Full Fellowship, Research Assistant, reached all but Ph.D. (ABD) stage*

1989 – 1993 Boğaziçi University (consistently ranked as one of Turkey’s top universities)

BSc, Industrial Engineering

1981 – 1989 Galatasaray Lycée (French/Turkish bilingual high school), Istanbul (Established in 1481, oldest in TR)

**MEMBERSHIPS AND CONSULTANCY**

* Member of American Nuclear Society (ANS)
* Consultant to Energy Disputes Arbitration Center (EDAC)
* Member of International Council for Commercial Arbitration (ICCA)
* Member of Miami International Arbitration Society (MIAS)

**LANGUAGES**

Native in English and Turkish, proficient in French, limited working proficiency in Spanish