

## **Company Profile**

ADICA, LLC is a leading provider of energy industry consulting and cutting-edge strategic analysis software that enables our clients to succeed in evolving energy markets.

### **Consulting Services**

ADICA combines a core staff of internationally recognized experts with a network of associated professionals from over twenty countries to provide consulting services for:

- Electricity market design and simulation
- Generation & transmission planning
- Pricing assessment, asset valuation and energy project finance
- National energy/environmental policy analysis and strategy development

ADICA is committed to empowering individuals, companies, and nations in pursuit of sustainable development. Consistent with this goal, our staff has organized projects to address energy planning needs throughout Africa, Asia, Europe, Latin America, North America and the Caribbean. Our approach to implementing national and regional projects is unique in that we both conduct insightful analyses and transfer our knowledge and state-of-the-art software for continued use by local experts.

### **Energy and Environmental Training**

ADICA staff has provided training on the analysis of priority energy and environmental issues for professionals from over 70 countries, which include:

Albania	Algeria	Argentina	Armenia	Bahrain	Bangladesh
Belarus	Bolivia	Brazil	Bulgaria	Chile	Bosnia&Herzegovina
China	Colombia	Croatia	Cyprus	Egypt	Czech Republic
El Salvador	France	Ghana	Greece	Guatemala	FYRO Macedonia
Haiti	Hungary	India	Indonesia	Iran	Japan
Jordan	Kazakhstan	Kenya	Korea	Kuwait	Lithuania
Madagascar	Malaysia	Mexico	Mongolia	Morocco	Nepal
Nigeria	Pakistan	Peru	Philippines	Poland	Portugal
Romania	Russia	Saudi Arabia	Senegal	Slovakia	Serbia & Montenegro
Slovenia	South Africa	Spain	Sri Lanka	Sudan	Switzerland
Tanzania	Thailand	Tunisia	Turkey	Ukraine	Uruguay
USA	Uzbekistan	Venezuela	Vietnam	Zambia	Zimbabwe

### **Strategic Analysis Software**

One of ADICA's unique offerings is the position of serving as worldwide distributor of cutting-edge energy market analysis software developed in collaboration with Argonne National Laboratory. These strategic analysis software tools include:

**EMCAS: Electricity Market Complex Adaptive System software** is designed to simulate how electricity markets may evolve over time and how participants in these markets may react to the changing physical, financial and regulatory environments in which they operate. The software utilizes innovative agent-based modeling techniques to more accurately model the behavior of electricity market participants. EMCAS is used to obtain unique and valuable insights enabling:

- *Regulatory Agencies* to test market rules and assess market power thus protecting consumers from the payment of unjust and unreasonable electricity rates;
- *Electricity Suppliers* to analyze alternative trading strategies and business practices to obtain a competitive advantage in the evolving marketplace;
- *Transmission Companies* to analyze the market impacts of adding new transmission lines or taking existing lines out of service; and
- *Financial Institutions* to have a better understanding of the expected revenues from merchant power plants in order to make sound investment decisions.

EMCAS is particularly well suited for countries that have decided to move from centrally regulated electricity systems to competitive markets, which can use this tool to test regulatory structures before they are applied to real systems. EMCAS simulates a wide range of market operating rules -- from those associated with a vertically integrated utility to those for a fully deregulated market operating under forward bidding procedures. To assess the potential influence of market power, EMCAS integrates optimal power flow computations with advanced market analytics. This approach accounts for critical locational and timing issues, such as the frequency and intensity of bottlenecks in the transmission grid, weaknesses in underlying market rules, and potential strategic behavior of market participants. Since the initial product launch in August 2005, the EMCAS software has been licensed for use by a wide spectrum of clients (e.g., electric utility, transmission company, regulatory agency, research center and university) in Asia, Europe, Latin America and North America.

**GTMax: Generation and Transmission Maximization model** was developed by Argonne to simulate complex electricity market and operational issues, both for competitive and regulated environments. With the aid of GTMax, utility operators and managers can maximize the value of the electric system taking into account not only its own limited energy and transmission resources but also firm contracts, independent power producer (IPP) agreements, and bulk power transaction opportunities. GTMax worldwide clients include Multilateral Development Banks, International Development Agencies, electric utilities, government institutions and regulatory bodies, power merchants, transmission companies and energy traders.

Under a project funded by the U.S. Agency for International Development (USAID), GTMax was used in a multi-country assessment to evaluate the economic benefits of implementing a regional energy market (REM) in Southeast Europe (SEE). Upon completion of this study, USAID contracted ADICA to provide GTMax licensing and training for fifteen energy companies in Albania, Bulgaria, Bosnia and Herzegovina, Croatia, Macedonia, Romania, Serbia and Montenegro. This project was followed up by a study conducted for the European Community and World Bank under which GTMax is used in the conduct of a Generation Investment Study for SEE.

**ENPEP: Energy and Power Evaluation Program** is distributed for use in over 70 countries. The model provides state-of-the-art capabilities for use in energy policy evaluation, energy pricing studies, assessing energy efficiency and renewable resource potential, assessing overall energy sector development strategies, and analyzing environmental burdens and greenhouse gas (GHG) mitigation options. Under World Bank sponsored projects, ENPEP was used to conduct an energy and environmental review in Bulgaria and to develop a long-term energy strategy for Romania. Noting the need to analyze policy issues dominated by market reform, sustainable development, and global climate change, the European Union contracted an independent review of energy planning and analysis software utilized in Mediterranean countries. This independent review recommended ENPEP as tool of choice for energy planning in the region.

## Performance References

- **European Commission and The World Bank**, software licensing, training and technical assistance for development of a “Generation Investment Strategy to Support a Regional Electricity Market in Southeast Europe”
- **USAID**, software licensing and training in support of “Development of Interconnections of Electric Power Systems of SECI Countries for Better Integration to European System”
- **Energy de France (EDF), Energias de Portugal (EDP) and Hrvatska Elektroprivreda (HEP)** licensing and technical support for ADICA’s Electricity Market Complex Adaptive System (EMCAS) software
- **Rede Eléctrica Nacional (REN) and General Directorate for Geology and Energy (DGGE)** project on “EMCAS Model Customization, Training and Transfer” for analysis of the Iberian Electricity Market
- **Chubu Electric Power Company, Japan**, Training on “Power Trading and Operation within a Competitive Electricity Market”
- **Korean Power Exchange**, Training on “Power System Planning in a Competitive Market Environment”
- **Japan International Cooperation Agency**, Training on use of WASP-IV and GTMax software in support of project on “Capacity Building for Generation Expansion Planning in the Philippines”
- **The World Bank**, Training on Demand Forecasting and Generation Expansion Planning for “Energy Sector Recovery Project” in Kenya
- **UNDP/GEF**, Project Identification and Feasibility Studies for the “Caribbean Renewable Energy Development Project”
- **Asian Development Bank**, Training in support of project on “Capacity Building for Energy Planning in Mongolia”
- **International Atomic Energy Agency**, Coordinated Research Project on “Case Studies to Assess and Compare Different Energy Sources in Sustainable Energy Supply Strategies”
- **West Japan Engineering Consultants**, “Electricity Pricing Study in Indonesia”
- **Tenaga Nasional Berhad, Malaysia**, “Intensive Training Course on Generation Expansion Planning Using WASP-IV”
- **The World Bank**, Training Mexican Energy Analysts in the use of the WASP-IV model for Wind Power Analysis