



ADICA, LLC

The Ultimate in Strategic Analysis



www.adica.com

Value Offering

- ❑ Provide energy industry consulting and strategic analysis software that enable our clients to succeed in evolving energy markets
- ❑ Specialize in the application of innovative software developed in collaboration with Argonne National Laboratory

ADICA Leadership



- Bruce Hamilton, Founder & CEO
 - Head of Energy Modeling at IAEA
 - Managed Energy Projects in 30 countries

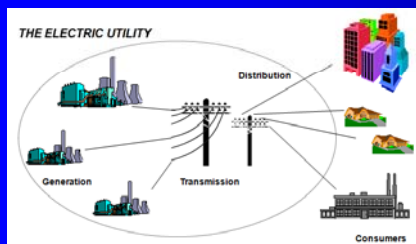


- Sandy Reeser, VP Business Operations
 - Accenture, Americas Organization Development Mgr

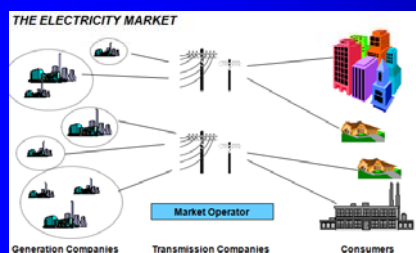


- Chris Thomas, VP Energy Solutions
 - Citizens Utility Board, Director of Policy

Problem: Utilities Need Accurate Analytics for Operational and Investment Decision-making



- Old Utility Planning :
 - Supply-side optimization



- New Factors:
 - Renewables & Smart Grid
 - Market Rules & Regulation
 - Supplier Competition
 - Consumer Choice

Solution: ADICA's Smart Market Software Product Suite

Deloitte.

Selected as best-of-class solution for electricity market analysis

Fraunhofer Institute

Noted "remarkable" aspects of agent-based software for simulating electricity markets

European Commission

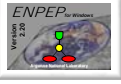
DG Competition - Chief Economist Team considering agent-based model

Strategic Partnership with Argonne


- Argonne is a DOE Lab
 - 2,800 employees
 - \$530M budget
- CEEESA has worldwide reputation for energy system modeling
- ADICA has exclusive partnership with Argonne to develop and distribute energy analysis software




Our Smart Market® Software Enables Informed Operational, Investment & Policy Decisions



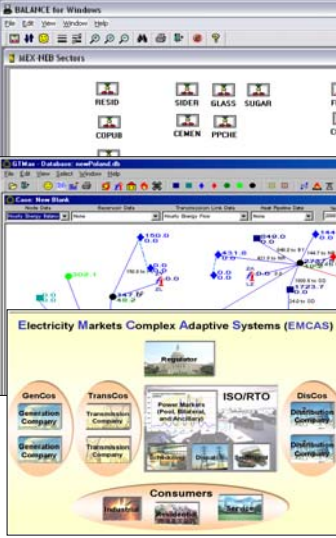
- **Energy and Power Evaluation Program (ENPEP)** simulates the full energy system for policy analysis and GHG abatement cost studies



- **Generation and Transmission Maximization (GTMax)** optimizes the dispatch of hydro and thermal generating units while analyzing complex electricity market issues



- **Electricity Market Complex Adaptive Systems (EMCAS)** software simulates the behavior of energy consumers, suppliers, and regulators.



BALANCE for Windows

MEX-HED Sectors

REGULATORY

GenCos
Transmission Company
Distribution Company

TransCos
Transmission Company

Power Markets
Power Exchange
ISO/RTO

DisCos
Distribution Company

Consumers

Electricity Markets Complex Adaptive Systems (EMCAS)

ADICA

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Worldwide Clients

- Trained over 1000 professionals from 70 countries on priority energy and environmental issues
- Clients include:
 - International Banks and Donor Organizations
 - Market Operators
 - Utilities
 - Transmission Companies
 - Government Agencies
 - Research Institutes
 - Consulting Firms

Approach to Project Implementation

- **DEVELOP** and customize power systems analysis software
- **APPLY** analysis tools
 - Conduct country-specific and regional studies
- **TRANSFER** software tools
 - Integrate customized software with clients' databases & systems
 - Organize technical training courses
 - Provide follow-on software maintenance and help-desk support

CAPACITY BUILDING IS A MAJOR COMPONENT OF OUR ENERGY AND ENVIRONMENTAL PROJECTS



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ADICA-Argonne Lead an International Collaboration Program on Distributed Energy Resources

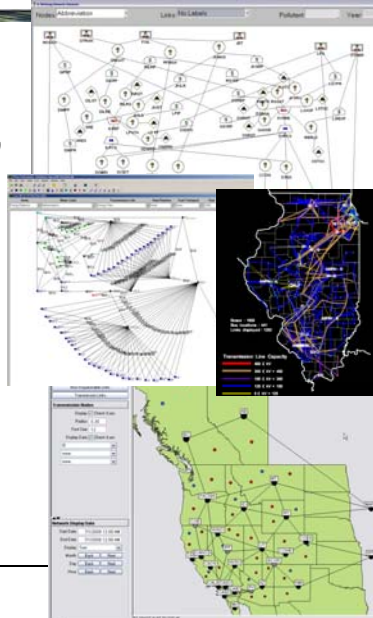
- **Review and participate in ongoing distributed energy resource (DER) research in the U.S.:**
 - ICP Members collaborate with PJM, MADRI, FERC/NARUC, etc.
 - ICP Publications on U.S. research activities, and summary of DER technologies, programs, and policies in U.S. electricity markets.
- **Apply Smart Market software to analyze DER options:**
 - Determine impact of Smart Grid infrastructure on power plant operations, electricity prices, consumption and carbon emissions.
- **Develop recommendations for DER policy-making**



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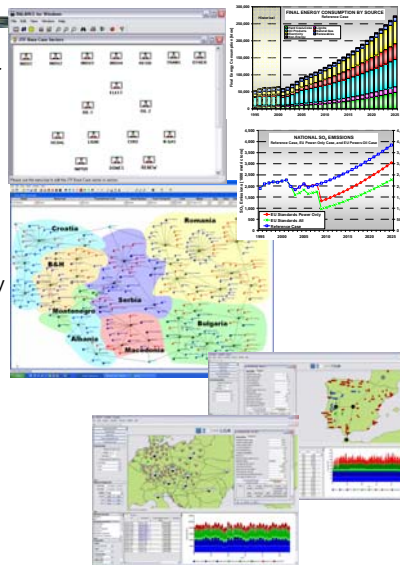
Examples of Smart Market® Software Applications in the United States

- **ENPEP:**
 - Enhanced strategic energy sector analysis and planning for Kentucky state Department of Energy Development and Independence (DEDI)
- **GTMax:**
 - Optimization of hydropower operations in the Western U.S. for Western Area Power Administration and Bureau of Reclamation
- **EMCAS:**
 - Analysis of deregulation issues for the State of Illinois
 - Analysis of climate change impacts on electric power system in the Western U.S.
 - Long term price forecasting for Western U.S.



Examples of Smart Market® Software Applications in Europe

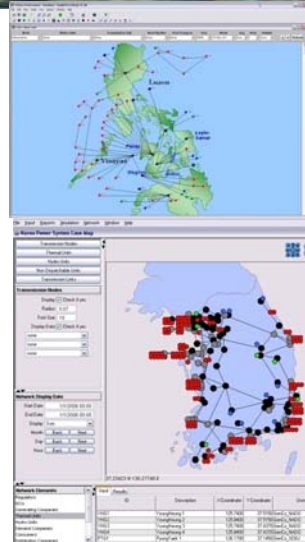
- **ENPEP :**
 - Long-term energy and emissions projections for Turkey for the World Bank
 - Recent and ongoing model implementations for energy forecasting, UNFCCC reporting requirements, CO2 national allocation plans in 17 European countries
- **GTMax:**
 - Financial evaluation of 2 transmission projects for U.S. energy company
 - Analysis of Southeast-European regional power trading (7 countries) for USAID, followed by generation investment study for European Union and the World Bank
- **WASP:**
 - Long-term power sector expansion analysis in Balkan region, Hungary, Macedonia, Romania, Turkey
- **EMCAS:**
 - Analysis of nuclear competitiveness in Poland for DOE-GNEP
 - Short and long-term power market analysis for EDF (France), EDP (Portugal) and HEP (Croatia)



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Examples of Smart Market® Software Applications in Asia

- **ENPEP:**
 - Model implementations in 15 Countries
- **WASP:**
 - Feasibility analysis of geothermal power station in Indonesia
 - Long-term power system studies in Pakistan, Nepal, and Malaysia
- **GTMax:**
 - Analysis of benefits of interconnections in the Philippines
 - Providing modeling support for Korea Electric Power Research Institute and Korea Energy Economics Institute
- **EMCAS:**
 - Analysis of power market issues in South Korea



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Examples of Smart Market® Software Applications in Africa and the Middle East

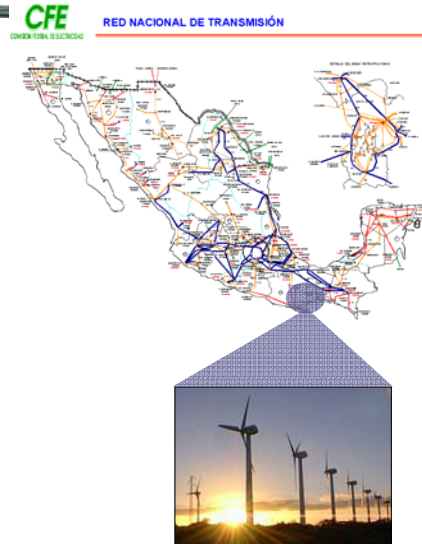
- **ENPEP:**
 - Egypt (Egyptian Natural Gas Holding Company, EGAS, uses model to project natural gas demand)
- **WASP-IV:**
 - Saudi Arabia (training on expansion planning for the World Bank with SEC)
 - Zambia (expansion analysis for the World Bank with ZESCO)
- **GTMax:**
 - Analysis of interconnection between Ethiopia and Kenya as part of East Africa Power Pool (1200 km, 400 kV)



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Examples of Smart Market[®] Software Applications in Latin America and the Caribbean

- **ENPEP:**
 - Mexico long-term energy forecasting (IAEA-TC) with Ministry of Energy and other local institutions;
 - Colombia national energy forecasting;
 - Peru; Uruguay natural gas analysis;
 - regional analysis in Brazil, Haiti, Jamaica
- **WASP-IV:**
 - Used for The World Bank/GEF to determine the economics of a 100 MW wind-farm in Mexico
 - Jamaica power sector investment analysis



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Summary of Our Business Offering

- Provide tools, information, know-how and support enabling our clients to succeed in evolving energy markets
- Leverage Argonne's extensive experience in model development to provide cutting edge analysis software
- Smart Market[®] tools are used world wide to analyze key strategic energy/power issues



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Thank You

For additional information, please contact:

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