

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA**

**In the Matter of the Application by Otter Tail Power Corporation, d/b/a Otter Tail Power Company for an Advance Determination of Prudence for the Big Stone II Generating Plant)
And)
In the Matter of the Application of Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc. for an Advance Determination of Prudence of Montana-Dakota's Participation & Ownership Interest in the Big Stone II Generating Station)**

**Case No. PU-06-481
and
Case No. PU-06-482**

**Direct Testimony of
Michael Drunsic
Synapse Energy Economics, Inc.**

**On Behalf of
On Behalf of
Mark Trechock
and
Dakota Resource Council**

May 31, 2007

I. QUALIFICATIONS

Q. Mr. Drunic, please state your name, position and business address.

A. My name is Michael Drunic. I am a Research Associate at Synapse Energy Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Mark Trechock and the Dakota Resource Council.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff (and have included the Staff of the South Dakota Public Utilities Commission), attorneys general, environmental organizations, federal government and utilities.

Q. Mr. Drunic, please summarize your educational background and recent work experience.

A. I graduated, cum laude, from Bates College with a BS in Biology. I received an MA in Energy and Environmental Analysis from Boston University. From 2002 to 2003 I was employed at Synapse Energy Economics as a Research Associate. In 2006, I rejoined Synapse in this capacity.

At Synapse, my focus is on computer simulation modeling of electric power systems and economic analysis of power generation technologies. I have provided modeling-related research and analysis project support in new source review litigation cases, regional clean energy plans, and resource planning projects. I am proficient in the PROSYM, PROMOD and STRATEGIST models, as well as statistical techniques such as regression and econometrics.

A copy of my current resume is attached as Exhibit MD-1.

Q. Have you previously submitted testimony before this Commission?

A. No.

II. CAPACITY EXPANSION MODELING

Q. What is the purpose of your testimony?

A. My testimony describes the Strategist modeling I performed under the supervision of David Schlissel.

Q. Please describe your modeling.

A. It was my responsibility, using the Strategist database provided by Montana-Dakota Utilities to make modeling runs requested by David Schlissel and the other members of the Synapse project team. Using the Strategist model, I also prepared modeling runs for two other Big Stone II Co-owners, that is, Central Minnesota Municipal Power Agency (CMMPA) and Missouri River Energy Services (MRES).

Q. Does this complete your testimony?

A. Yes.

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Cambridge, MA. Research Associate, 2002-2003 & 2006-present. Specialize in computer simulation modeling of electric power systems and economic analysis of power generating technologies including modeling-related research and analysis in new source review litigation cases, regional clean energy plans, resource planning projects, and analysis of energy efficiency and distributed generation technologies.

TPW Management, Bondville, VT. Manager, Water Operations Division, 2005-2006. Managed the operations of 15 public water systems including water treatment, water system maintenance, public notification, regulatory compliance, and recordkeeping. Developed source protection plans and operations and maintenance manuals for public water systems. Created and implemented a business development plan for the division, and developed division budgets.

Spiral Press Cafe, Manchester, VT. Owner and General Manager. 2003-2005. Oversaw all aspects of restaurant operation from start-up construction to on-going operation including staff management, inventory management, menu development, food preparation, and customer service. Analyzed business performance to maximize the profitability and long-term success of the business.

Boston University, Geography Department, Boston, MA. Teaching Fellow. Spring 2002. Taught introductory environmental science discussion labs on issues ranging from bioengineering to global climate change. Planned lessons for four lab sections per week and assigned and graded papers and quizzes for approximately 90 students.

Merck Family Fund, Milton, MA. Intern. Summer 2001. Researched environmental issues, managed grants database, updated website, and published the Fund's quarterly newsletter. Researched the economic, social, and environmental values of green space for the Greening of Boston, a coalition exploring the current state and future of Boston's green space.

Arthur D. Little, Cambridge, MA. Chemist. Spring 2001. Used EPA extraction methods to prepare sediment, water, and tissue samples for analysis for various toxins.

EDUCATION,

Boston University, Boston, MA, 2001-2002.
Master of Arts in Energy and Environmental Analysis

Fields of study: Energy economics, econometrics, environmental policy analysis, ecological economics, dynamic systems modeling, geographic information systems (GIS), statistical analysis, risk analysis.

Bates College, Lewiston, ME, 1994-1998.

Bachelor of Science in Biology, *Cum Laude*

Courses in ecology, environmental studies, and the liberal arts.

School for International Training, Tanzania, East Africa, Spring 1997.

Studied wildlife ecology and conservation issues, as well as local culture and language.

ADDITIONAL TRAINING AND SKILLS

- New Energy Associates “Basic Strategist” training course. July 2006.
- Global Energy Decisions “MarketSym to Enerprise 3.0 - Zonal Market Analytics” training course. June 2006.
- Henwood Energy Services “Basic PROSYM” training course. September 2002.
- Attended “Wind Generation in Power Systems: A Short Course on the Integration and Interconnection of Wind Power Plants into Electric Power Systems” hosted by Utility Wind Integration Group, September 2006.
- Computer skills include proficiency with PROSYM, STRATEGIST, Access, and Excel, and experience using PROMOD, ArcGIS, SAS, RATS, and STELLA.

SUMMARY OF TESTIMONY, REPORTS, AND INVESTIGATIONS

TESTIMONY

Minnesota Public Utilities Commission (Docket Nos. CN-05-619 and TR-05-1275) – November 2006. Modeling analysis of a proposal by seven utilities to build a new supercritical pulverized coal plant and an associated transmission facility; analysis included using the Strategist resource planning model to evaluate and critique resource plans of three of the seven utilities.

REPORTS

A Balanced Energy Plan for the Interior West, prepared for the Hewlett Foundation Energy Series, with Western Resource Advocates and Tellus Institute, May 2004.

Modeling Demand Response and Air Emissions in New England, a report for the U.S. Environmental Protection Agency by Geoff Keith, Bruce Biewald, David White and Michael Drunsic. September 4, 2003.

Air Quality In Queens County: Opportunities for Cleaning Up the Air in Queens County and Neighboring Regions, a report for a collaboration of KeySpan Energy, Natural Resources Defense Council and Coalition Helping Organize a Kleaner Environment by Tim Woolf, Geoff Keith, David White, Michael Drunsic, Montserrat Ramiro, and Jeannie Ramey of Synapse Energy Economics with Jonathan Levy, Patrick Kinney, Susan Greco, Kim Knowlton; Brian Ketcham of Konheim & Ketcham; Charles Komanoff of Komanoff Energy Associates; and Daniel Gutman. May 12, 2003.

Comments on EPA's Proposed Clean Water Act Section 316(b) Regulations for Cooling Water Intake Structures at Phase II Existing Facilities, prepared on behalf of Riverkeeper, Inc., by David Schlissel, Geoff Keith, David White and Michael Drunsic. August 7, 2002.

INVESTIGATIONS

Review of IOU Long Term Procurement Plans in California – Ongoing.

Review of 2006 Long Term Procurement Plans for PG&E, SCE, and SDG&E, and development of an aggregate supply-demand balance table.

Electric Policy Initiatives in Arkansas – Ongoing.

Various tasks for the Arkansas Public Service Commission Staff on issues related to electric policy initiatives including review of EPAct 2005 PURPA Amendment requiring consideration of a fuel diversity standard and review of Entergy Arkansas' need for load-following capacity. Ongoing.

Valuation of Gas-fired Cogeneration Plant – January 2007.

Valuation of a gas-fired cogeneration facility in Jay, Maine for a property tax assessment case.

Review of Consumers Energy Resource Conservation Plan – October 2006.

Provided analytical support for testimony filed by Rick Hornby in a review of costs and payments under Consumers Energy Resource Conservation Plan in Michigan Public Service Commission Case No. U-14274-R.

Review of the Proposed Merger Between Exelon Corporation and Public Service Enterprise Group – August 2006.

Analyzed the market power effects of the proposed merger between Exelon Corporation and Public Service Enterprise Group by re-running delivered price test analysis by petitioners' witness Frame and providing other analytical research support.

Analysis of New Source Review Provisions – October 2002.

Provided modeling-related project support including analysis of PROSYM and PROMOD runs in preparation of rebuttal report of Bruce Biewald for U.S. Department of Justice.

Resume dated January 2007.