

- Project Title** Design, Implementation, Training and Start-Up of an Interim Market System at the National Load Dispatch Center of Vietnam Electricity
- Contracting Agency** Vietnam Electricity (EVN). Project execution and supervision under the responsibility of the National Load Dispatch Center (NLDC)
- Project Organization** Prime Contractor: Energy Consulting International, Inc. The work has been performed by Savu C. Savulescu, with full responsibility for all the technical and project management aspects of the assignment
- Summary** The project entailed consulting services to NLDC in conjunction with the design, implementation, training, site testing and start-up of the VietPool Interim Market System in Vietnam.
- Background** When the electric power system started to move towards an electricity market, it was anticipated that such market would be predicated on the single buyer paradigm. This model designates a system in which: only a single entity buys and sells electricity; all producers sell to the Single Buyer on a competitive basis; all consumers buy from the Single Buyer against optimized prices; the Single Buyer also manages the network, undertakes long-term planning and optimization of investments, and ensure respect of services of general economic interest. Since bilateral contracts do exist between eligible customers and suppliers, the Single Buyer also buys the energy associated with these contracts at the price it charges its customers less a transmission charge. Accordingly, it was anticipated that: EVN would be the Single Buyer and will sign yearly or otherwise long term Capacity / Energy Contracts with the Producers; NLDC would perform monthly and weekly scheduling on the merit order, initially, and hydrothermal optimization, in a subsequent stage, and send the generation schedules to the Producers after validating them with extensive network operating reliability checks; and the differences between the forecasted and actual load demand and real situation would be adjusted via day-ahead and/or hour-ahead bids. On the other hand, in April 2004 NLDC had completed the study Approach Alternatives, Cost-Benefit Analysis for EVN SCADA/EMS Migration Strategy, and Conceptual Design of a New System for NLDC¹, which, among other provisions, recommended that the early Market Operator responsibilities of NLDC be supported by an Interim Market System that would serve primarily as a "test bed" for operating the market. In order to achieve this goal, NLDC retained Energy Consulting International, Inc. to assist in all the steps, from preliminary design through site testing and system start-up. Quite remarkably, the project was successfully conducted on a crash schedule: it began in April 2004, and the Interim Market System, known as VietPool, became operational in September 2004
- Objectives** The main project goals have been to:
- Develop a strategy focusing on the interaction between the implementation of the Interim Market System, on the one hand, and the SCADA/EMS

¹ Please refer to the project data sheet *Approach Alternatives, Cost-Benefit Analysis, Migration Strategy and Conceptual Design of a New SCADA/EMS System at the National load Dispatch Center of Vietnam Electricity*

migration, on the other, by adhering to the following requirements: the Interim Market System shall include all the needed market monitoring and management applications; it shall be possible to start implementing the Interim Market System without the need to make changes on the existing SCADA/EMS systems; it shall be possible to use the generation schedules developed by the Interim Market System on the existing SCADA/EMS either manually or via simple file transfer interfaces, for example, ASCII or *.csv; it shall be possible to use generator and load data developed by, or stored in, the existing SCADA/EMS in the Interim Market System; any interaction between the existing SCADA/EMS system and the Interim Market System shall be designed and implemented via data interfaces and shall be totally independent of the system and support software, such as operating systems and database management software; and, in accordance with the phased implementation approach defined by NLDC, undertake the Phase One which encompasses the design and implementation of a preliminary solution that provides core pool management and operation functions, could be used to test the market rules, familiarize the market agents with the new procedures and evaluate the impact on system economics and operation, and provides for day-ahead pool clearing, scheduling and pricing

- Develop a project coordination and supervision plan encompassing the: preparation of a preliminary design memorandum to be used by the NLDC selected System Vendor, Local Contractor and NLDC Project Team as a starting point for the Kick-Off Project Meeting and the subsequent design and implementation tasks; specification and scheduling of a training program that would allow the NLDC Project Team and selected participants from the Local Contractor to directly participate in the design and implementation process, perform all the needed data collection and interfacing tasks, and acquire the skills required to operate and maintain the Interim Market System; preparation of a project implementation schedule that would make it possible for the Interim Market System to become operational in early September 2004

Additional responsibilities of the Consultant included:

- Overall project coordination
- Participation in the system acceptance testing
- Reporting to, and working in coordination with the NLDC Project Director
- Task 1: Prepare the Preliminary Design Memorandum and Project Implementation Schedule. This task encompassed the preparation of: a succinct, yet crisp, preliminary design that was used by the System Vendor to develop the detailed design and implementation documents; a project implementation schedule that was used by the System Vendor, Local Contractor and NLDC Project Team during to develop the Final Project Implementation Plan; and the agenda for the Kick-Off Project Meeting

Scope of Work

- Task 2: Kick-Off Meeting in Hanoi, which consisted of a four-day meeting at the NLDC with attendance from the System Vendor, Local Contractor, NLDC Project Team, and, respectively, the Consultant. The meeting aimed at: reviewing the detailed design document and the implementation, testing and commissioning schedule proposed by the System Vendor; discussing the comments submitted by the NLDC Project Team and the Local Contractor; recommending design and implementation plan adjustments as needed; developing a detailed training agenda and schedule; and defining responsibilities with data collection and interfacing
- Task 3: Assist NLDC during the Implementation of the Interim Market System, which, in addition to project monitoring and coordination, included reviewing and commenting on the: final design document prepared by the System Vendor; installation, site-testing and commissioning plan developed by the System Vendor; progress achieved in personnel training
- Task 4: Participate in the site-testing and commissioning of the Interim Market System, which encompassed a one-week working visit to Hanoi to: witness the site-testing of the Interim Market System; participate in the final system acceptance meeting; collect additional information as needed to prepare the Final Report
- Task 5: Preparation of the Final Report, which documented the project results and recommended the line of action to be followed by NLDC for the subsequent phases of the Interim Market System

**Period of
Performance**

April – September 2004