



# The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

## Final Copy of Case Study

**LOCATION:**  
*Broomfield, CO, US*

**ORGANIZATION:**  
Electricity System Operator – ESO

**YEAR:**  
*2011*

**ORGANIZATION URL:**  
<http://www.tso.bg/default.aspx/en>

**STATUS:**  
*Laureate*

**PROJECT NAME:**  
Development of an information system for dispatcher's register at the four Territorial Dispatching Units

**CATEGORY:**  
*Business  
Responsiveness*

### PROJECT OVERVIEW

The company of the Electricity System Operator - ESO EAD was established on January 04, 2007 as a subsidiary of the Bulgarian National Electrical Company - Natsionalna Elektricheska Kompania - NEK EAD based in Sofia and it is a single-owner joint-stock company, wholly-owned by the State and managed by the Bulgarian Minister of Economy and Energy. The National Dispatching Center of the Electricity System Operator performs the general operational planning, coordination and control of the electrical power system of the Republic of Bulgaria, as well as its common operation with the electrical power systems of other countries. The Web Portal project for the National Dispatching Center was started when the National dispatching was a part of the National Electric Company (NEC) in Bulgaria. The aim of the system Dispatcher Register is to provide the dispatchers working at the Territorial Dispatching Units (TDU) a system to input the data for the production, transmission and consumption of electric power. All the data is collected and concentrated at the TDUs and the Central Dispatching Units (CDU) of the Electricity System Operator. These data are used by the technological departments at TDU and the system Operational Dispatching Information (ODI) at CDU to extract analytical information for past periods. The old information system that was used for the last 15 years was on programming language Basic, under operating system DOS (emulation of DOS under Windows). The scope of the new project is to make an entire re-design of the system using modern technologies as well as significantly improving various features and functionalities of the system. New system architecture and analytical model are designed with Sybase PowerDesigner, including: conceptual data model, physical database model of the dispatcher's register at the TDU, enterprise application model and model of data flow between dispatcher's register and ODI and CRMD systems. The system's basic features and functionalities are: • Design and development of a system based on a modern relational database management system (RDBMS), intended to keep the information from the system dispatcher's register, and to change the current way of keeping information into



successive files • Automation of the process for input of definite data types • Possibility for input of information for new types of generating power (For example – adding information for electric power produced by renewable sources) • Possibility for "flexible" change of nomenclatures (objects, facilities, etc.) • Adding new functionalities (reports, data exports, etc.) • Implementation of a modern system security at database level as well as at application level using modern technical instruments, compatible with the current technologies used at the CDU • Improving the communication with system ODI at CDU The dispatchers manually input the data into the system dispatcher`s register several times a day, receiving the information over the phone from the personnel on duty at the respective TDU. The following basic types of information are inputted on a regular basis: 1. Production of the electric power stations (power generation) 2. Power consumption 3. Voltage and flows 4. Intersystem electric transmission 5. Data about dams 6. Data about fuels

### **SOCIETAL BENEFITS**

Society benefits from this project are indirect. We may say that the new system for Dispatcher`s register contributes for the proper power supply and power failure control and prevention.

### **PROJECT BENEFIT EXAMPLE**

The main benefit of this project is to support the management, the dispatchers and the rest of the personnel at ESO EAD in their daily activities related to administration and management of the energy supply system in Bulgaria.

### **IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes**

### **ADDITIONAL PROJECT INFORMATION**

Prehistory of the project The nominated project "Development of an information system for dispatcher`s register at the four Territorial Dispatching Units" is part of several information systems for automated management of the energy supply system developed from Global Consulting for the period 2006 – 2010. The information systems at the Electricity System Operator (ESO EAD) and in particular at its Central Dispatch Unit (CDU) are designed to support the management, the dispatchers and the rest of the personnel in their daily activities related to administration and management of the energy supply system in Bulgaria. The information systems are basically divided in two types - real-time and back-office. Global Consulting expertise at ESO EAD is in the sphere of back-office systems. The aim of the back-office systems at ESO EAD is to collect data, related to various aspects of the daily work of the energy supply system, from various points in the 2 territory of our country and all the collected data is concentrated at the CDU. Based on this data the Managers of the Dispatch Units and Department "Regimes and Relay Protection Division" are able to take timely decisions concerning the management of the energy system. Another aspect of these systems is to use the collected data for analytical purposes, for various reports and forecasts for future trends.