

Advanced Technology for Energy Systems Management at the Israel Airports Authority

The Airports Authority implements SATEC's eXpertpower™ for efficient and economical energy management



For the Israel Airports Authority, electricity is a basic essential product. The orderly operation of any electrical system - such as air conditioning, lighting, cargo transport, or automation and control systems - is far from being a luxury. In addition, a disturbance in the supply of energy or a system's failure is liable to be a serious nuisance, and even cause extensive damage.

The management of energy systems at the Airports Authority is therefore one of the critical operative factors currently on the agenda. The system needs to function correctly, and be planned, constantly fine-tuned, and tightly controlled to ensure zero malfunctions.

Besides the pressing need for the optimal management of energy systems at the ports and facilities of the Authority, the Airports Authority contends with two additional overlapping issues: budget limitations and the prudent use of public funds on the one hand, and environmental obligations on the other.

As a large-scale, essential consumer of electricity, the Authority has established two goals based on which they design their policy in the area of energy management. One is to minimize use and decrease in expense of electricity. The other is the preservation of the environment.



These issues make the topic of electricity management an even more complex challenge. The Authority does not have the luxury possibility of setting up an energy management infrastructure based on a huge budget. They have to constantly juggle funds and optimize cost and benefit. In order to accomplish this complicated task, the Airports Authority relies on the use of eXpertpower™ to track the consumption of electricity and the efficiency of energy management. eXpertpower™ is

constantly updated and fully reflects the consumption of electricity at the Authority's installations: ports, border terminals, offices etc.

eXpertpower™ is an Internet-based service, using infrastructure that already exists at the Authority and requires no additional hardware expenses. It is composed of modules developed in advanced technology, allowing real-time monitoring and control, anywhere and at any time.

The system is not limited to any number of users and provides service to various departments, such as the engineering, quality control, economics and logistics departments.

eXpertpower™ calculates energy costs for each of the locations of the Airports Authority. It also analyses trends and patterns over the long term. It enables locating of electrical defects and sends out alerts through various channels about events in each of these areas.

These capabilities give the various departments decision-making tools supported by real information, so they can invest resources in the right places and plan the future consumption of electricity as well as the expansion needed to support the growth of electrical consumption. In addition, the automatic monitoring of electrical consumption by all areas of the Authority, the calculation of maximum demand and reading of other electrical data, allow the control of electrical consumption, avoiding electrical outages at the various facilities.

Did you know?

- The Airports Authority consumes about 150 million KWH
- The yearly expenditure of the Airports Authority on electricity totals about NIS 50 million
- The maximum hourly consumption of electricity at Ben Gurion airport is growing at an annual rate of about 6%
- The maximum hourly consumption at Ben Gurion airport is projected to reach a rate of 45 MW by 2015

One of the advantages of the system is the tools it provides the customer. On the advice of SATEC (eXpertpower™), and at the instigation of Yuval Margulis, the head electrical and air-conditioning engineer at the Airports Authority, the system was also used to save money.

Due to a lack of electricity in Israel at peak hours, the Electric Authority implemented load-sharing arrangements using private generators. In the framework of this arrangement, the Electric Company periodically publishes operating rates for internal energy consumption. The Airports Authority operates the generators according to a daily profitability table compiled by eXpertpower™, and on the basis of this receives significant financial returns from the Electric Company.

For the Airports Authority, and particularly for Ben Gurion International Airport, the Israel Ministry for the Environment limits the amount of hours the generators can operate. For this reason, eXpertpower™ generates a calculation according to the data of the Electric Authority and taking into account the limited hours, and recommends the most profitable hours for running the generators. The use of generators at the Airports Authority contributes to lessening the load at the Electric Company during peak use, helps reduce electrical failures in Israel, and even compensates for them financially.

The significance of adopting an online operated control system is that even in the near future the Authority will be able to calculate electrical expenses in any area. The Airports Authority hopes not only to lower costs, but also to develop possibilities for profits in the area of electricity by reducing operating expenses. All this, while improving environmental quality by reducing the rate of air pollution.

Read more about eXpertpower™ services at www.satec-global.com

