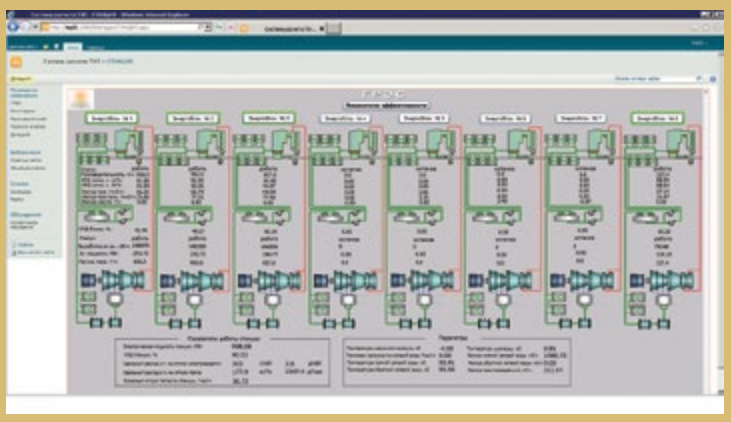
*Map of Central Russia*

Customer Success Story

# Global Energy Generation Firm
## Central Russia

GEGF



*Overview HMI Screen*

*"The use of ICONICS software to calculate excessive fuel consumption, coupled with its presentation of current engineering and economical performance analyses (technical process rates) allows us to identify and determine the reserves of increasing a thermal power plant's efficiency. In the final analysis, this allow thermal power plant owners to optimize their production capacity in order to be competitive in the electricity market, as well as increase energy company profits in general."*

### About this Global Energy Generation Firm

A recent customer of ICONICS is a large energy generation firm comprised of a network of plants located throughout Central Russia. The largest of the sites is a 2500MW facility that is fueled by a combination of natural gas and fuel oil and consists of four thermal power plants. This location has now been optimized via ICONICS technology.

### ICONICS Software Deployed

The Russian energy firm, working with system integrator, RVS, selected ICONICS GENESIS64™ HMI/SCADA, Hyper Historian™ data historian and BizViz™ manufacturing intelligence (including PortalWorX™ real-time collaboration and visualization dashboard and ReportWorX™ enterprise reporting, charting and analysis) software.

### Project Summary

The large-scale Russian energy provider has had basic direct digital control (DDC) for many years. Working with its system integrator, RVS, the firm initiated a major optimization effort, with a preference towards utilizing the latest software technology while simultaneously ensuring integration with a wide variety of data sources. The firm sought a solution that could handle the data from four thermal power plant (TPP) production branches (each with approximately 5,000 I/O points) as well as from its executive office.

An additional major need of the plant was to provide a uniform, insightful user interface to all operations and levels of management. The company required dashboards that could provide needed insight in order to drive immediate improvement actions. The site also sought a major upgrade in its reporting capabilities.

Prior to considering this upgrade, a legacy data historian from OSI PI provided limited visualization and

report capability, but could not provide the depth of information available.

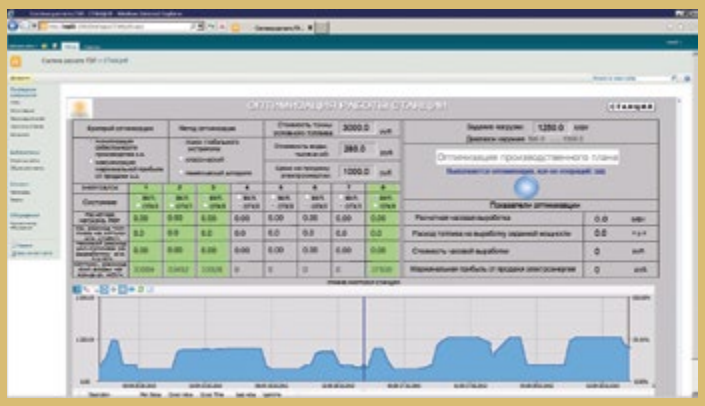
## Benefits of the System

Since ICONICS GENESIS64 was selected as its preferred automation software platform, the plant has been able to integrate real-time plant data, legacy historical data, newly recorded data (utilizing ICONICS' powerful Hyper Historian data historian), data from various business systems, and simulation and forecast data generated by MathWorks MatLab® simulation programs.

The need for insightful, intuitive user interfaces was fulfilled via GENESIS64's GraphWorX64™ and TrendWorX64™ components and PortalWorX™ real-time collaborative visualization tools, which helped to create powerful Microsoft SharePoint®-integrated operations dashboards. These solutions help to ensure the delivery of needed information to each role within the organization, supporting necessary decision-making in order to optimize operations. Also, the firm's requirement for enhanced reporting has been accomplished by ReportWorX, which delivers operational reports as well as plant revenue and profit reports.

GENESIS64 provides the Russian energy firm with state-of-the-art process graphics, monitoring and control interfaces needed for uniform operation. Utilizing the extensive array of data sources that can be compiled by the GENESIS64 platform, the energy producer's new automation system is able to produce operational guidance that includes:

- Proposed optimum sequencing of generators and support equipment to achieve planned load dispatch schedules
- Proposed optimum fuel consumption based on current and forecasted fuel costs
- Proposed optimum use and maintenance schedules of all equipment based on daily or monthly forecasts of dispatch demand, due to forecasted weather, forecasted local industrial production, and/or historical demand. ICONICS software allows the firm to use 'current runtime' and other equipment health data and asset reference data to predict uptime and schedule required downtimes



*Main Dashboard*

*Trending Screen*

- Continuous transparency of planned, actual and normative power production of each generating unit and of the plant as a whole
- Achieved and Forecasted Next Day, Week and Month plant revenue and profit margin based on all cost factors and spot and projected electricity prices

Management at the energy firm notes that the system has increased the ability to better observe processes as well as increased transparency in both operations, and revenue/profit information (both original, estimated and forecasted operational and economic indicators). Operational staff now conduct processes more efficiently due to the introduction of incentive schemes based on operational and economic performance calculated in real time.

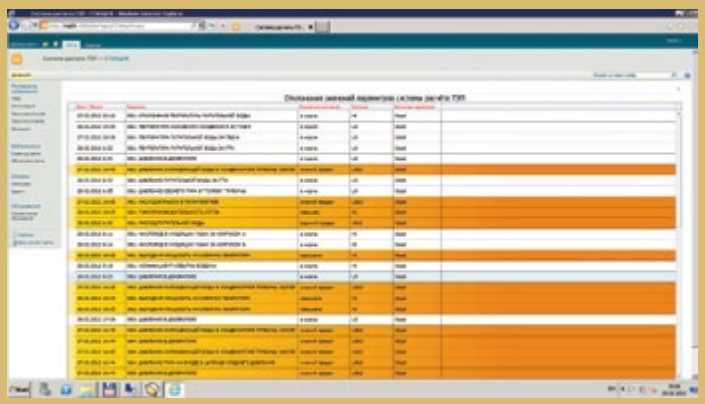
*Continued on the next page...*

Additional results include:

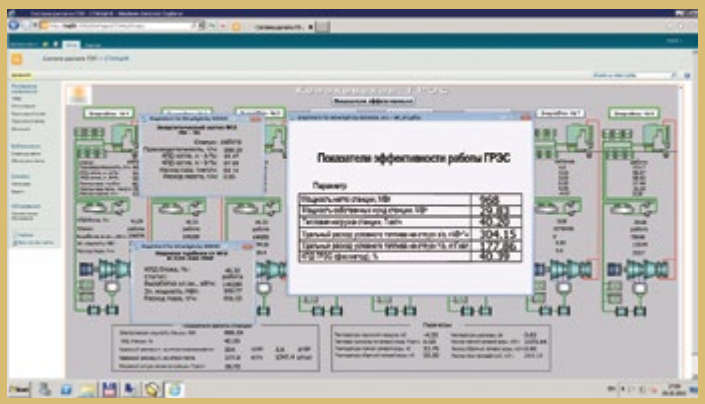
- Short and long-term optimization (setting the optimum choice of equipment and load allocation, economic dispatch and unit commitment)
- Optimized operation of heat stations (which helps maximize profit margin)
- Operating and economic performance prediction calculation
- Calculation of the optimal flow rate of circulating water to the condenser (which helps to reduce environmental costs).

## About RVS

RVS is an engineering company that implements multi-purpose projects aimed at enhancing energy infrastructure efficiency across an enterprise, including processes involving production, transfer, distribution and consumption of energy resources. The company's involvement encompasses the complete project cycle, from analysis and design to technical support of the implemented solutions. RVS provides a complete suite of innovative solutions required for the efficient operation of power facilities including automation systems, the reconstruction of power sites, the increase of energy efficiency, and service maintenance of installed systems.



*Alarm Management Screen*



*Drill-down Information*

## Conclusion

ICONICS GENESIS64, Hyper Historian, BizViz and their components have helped this Russian energy provider transition to cutting edge technology that allows them to build upon their legacy infrastructure and integrate with diverse data sources, thereby ensuring operational integrity.

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