



## EnMS implementation by UNIDO methodology

### POZIS

Joint-Stock Company "Production Association "Zavod imeni Sergo" (POZIS) is currently a leading machine construction enterprise in Russia, and the sole producer of large household appliances and high-end medical cooling equipment in the Republic of Tatarstan. With approximately 4.5 thousand employees the plant concentrates on refrigeration equipment, produces more than 4.6 billion rubles of production annually and consumes 64.2 GWh of electricity and 19144 thousand cub.m. of natural gas per year.<sup>1</sup>



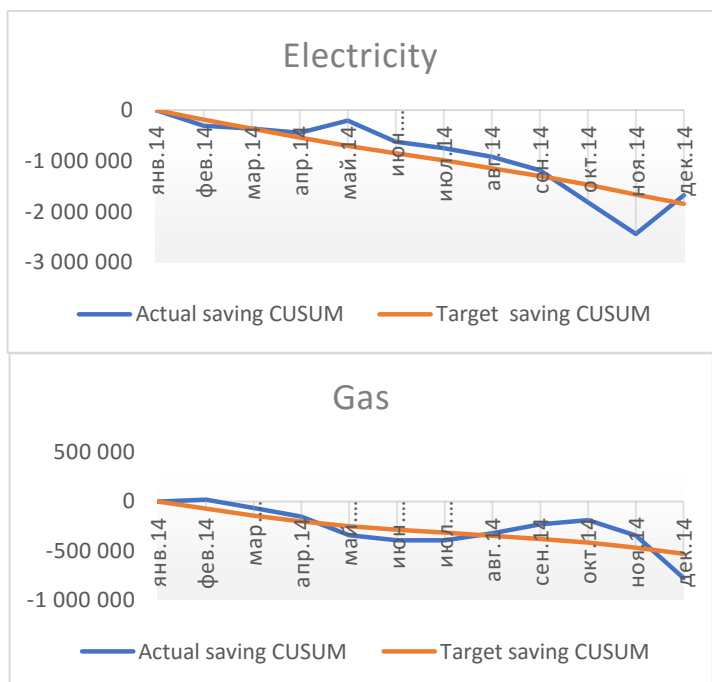
In 2014 (January – December), POZIS joined the Industrial Energy Efficiency (IEE) Programme implemented by the United Nations Industrial Development Organization (UNIDO) and with financial support from the Global Environment Facility (GEF). Within the scope of partnership with UNIDO, POZIS has started implementing energy management system (EnMS).

### Results

By applying systematic approach to EnMS implementation, with the use of UNIDO tools, such as regression analysis, critical operating parameters, and constant performance monitoring, POZIS has managed to save within a yearly period **2.66 GWh** of electricity and **1.24 million m<sup>3</sup>** of gas, which in monetary terms equals to **249 855 USD**.

The graph of electricity savings for 2014 indicates that cumulative consumption has exceeded the target saving curve. It was caused by the fact that the company has started renovation of its equipment, and starting-up and adjustment processes consume a lot of energy, without being “tied” to variables. In the end, target indicators were achieved, and cumulative gas

### Improvements in energy efficiency



savings even exceeded the target goal.

<sup>1</sup> Data for 2014

Energy savings	1.26 GWh of electricity, 1239 m <sup>3</sup> of gas
GHG Emissions reduction	9 655.9 tonnes CO <sub>2</sub>
Gross monetary savings	11 243 491 RUB (= USD 249 855) <sup>2</sup>
Other non-energy benefits	Development of action plan for no-cost energy saving initiatives
Total investment	1 588 850 RRUB (=35 307 USD)
Average Payback Period	0.11 years

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<sup>2</sup> By 2014 exchange rate.

## Examples of implemented measures

Prior to joining the UNIDO project, the company has already had in use energy saving programme, but it didn't include low-cost initiatives of operational control. The Energy management system allows the company to reveal such additional saving opportunities and incorporate them into general energy saving plan.

Examples of implemented measures within EnMS project	Estimated/Actual (Annual) Savings		Total Cost (Rub)	Payback (years)
	Electricity, Gas	Cost (Rub)		
Modernization of condensing units for reactive power compensation	129 000 kWh	387 000	823 700	2.1
Variable frequency drive installment in pumping stations	325 400 kWh	976 200	765 150	0.8
Correction of the heating modes for the 2 production workshops	400 000 m3	1 480 000	0	0
Compressed air pressure reduction in certain areas	125 000 kWh	375 000	0	0

According to UNIDO methodology for EnMS implementation, POZIS working group on EnMS identified all significant energy users, built the models and checked critical operating parameters for those SEUs. These actions allowed the team to see that there was an excessive amount of compressed air used in the process. Following a programme of leak isolation and pressure reduction (at zero financial investment), has resulted in 125 MWh savings of electricity.

## Barriers

- ✓ Among the main challenges for EnMS implementation was initial disproportion in how the roles and responsibilities were distributed among the team responsible for EnMS implementation. At first, it was just one person in charge of this whole process in the plant, but later on this has been corrected, and the workload and responsibilities were distributed among other members of EnMS team as well.
- ✓ Another barrier was related to the lack of low- and no-cost activities in the energy saving plans, as they were not regarded as opportunities for energy saving before EnMS implementation project. However, within the process of project realization, the management of POZIS has gained understanding of the importance and the impact of low-cost activities aimed at operational control.

## Conclusions

In general, after participation in EnMS project, the understanding of importance of energy performance measurement has increased; adoption of the UNIDO methodological approach has simultaneously improved the reliability and productivity of energy performance models at the enterprise.

Achieved results have proved that substantial energy savings can be achieved without financial investments or reducing output, but by applying systematic approach to energy performance through constant improvements in operation and maintenance. The case of POZIS enterprise has demonstrated that initial interest and commitment and of top management, strong background and awareness of EnMS team, openness to change and emphasis on constant reduction of energy consumption contribute to successful and highly impactful EnMS implementation.