

Update on DOE/PNNL Industrial Energy Efficiency Program in Ukraine: Ukrainian Industry Invests \$1 million in Energy Efficiency

The U.S. Department of Energy (DOE) and Pacific Northwest National Laboratory (PNNL) have supported six profitable Ukrainian firms which must improve their energy productivity to be competitive. To date, the plants have invested \$1.2 million of their own funds in the recommended energy efficiency measures. These investments are significant not just for the savings they will generate, but also because they demonstrate the long-term commitment these companies have to energy efficiency as a result of the DOE assistance. Each of the factories in the program has approved a comprehensive package of recommendations, including installation of up to 45 megawatts of cogeneration capacity at Avdeevka Coke Chemical Plant, and a multi-million dollar furnace at Gostomel Glass Plant. DOE and PNNL are continuing to help the plants structure financing for even larger energy-efficiency projects. Tapping this energy efficiency potential can help Ukraine shut down the Chernobyl reactors by offsetting demand for Chernobyl power.

Highlights of the successes at these plants include:

Gostomel Glass Plant has invested in three waste heat recovery boilers, new steam pipe insulation and an efficient compressor. The total cost of these measures according to the energy audit is over \$750,000. The energy efficiency assistance is changing not only the specific process areas targeted in the PNNL energy audit report, but also the corporate mentality toward energy use. For example, Gostomel has begun work on energy efficiency measures beyond the initial recommendations and has installed equipment to improve power factor and reduce demand charges, saving the plant almost \$10,000 from July to November of 1998.

PNNL is working closely with Gostomel to secure an additional \$18 million to upgrade one of its glass furnaces. Gostomel is negotiating with potential strategic investors to create a joint venture that would finance the new process lines. Despite the recent economic decline, Gostomel remains profitable because of its remarkable propensity to attract paying customers and quickly replace those that can no longer pay.

Avdeevka Coke Chemical Plant has upgraded most of its outdoor lighting with more modern, efficient fixtures at a cost of approximately \$250,000. It has invested \$120,000 in upgrading its steam pipe insulation and has organized a dedicated team of 21 technicians to monitor and maintain the steam lines year round. Until the energy audit, plant staff had often considered steam a virtually free by-product of their coking process, since it is produced with waste coke gas. In addition to the demand-side investments, Avdeevka's board of directors has decided to acquire a 15-MW cogeneration system. The company is currently seeking financing for this measure and has initiated negotiations with potential vendors. The plant may add 2 other cogeneration units later. The total cost for all three units is approximately \$40 million.

Rosich Food Processing Plant has hired a local energy services company to implement all but one of the recommendations from the energy audit report, including recovering heat from condensate, and repairing air leaks in exhaust ducts. Combined, the implemented measures should save the plant nearly \$12,000 per year. Rosich is also planning to implement an additional \$8,000 variable frequency drive measure if it can find a suitable domestic supplier. Rosich continues to show a profit because of its quality products and exports.

Kerch Metallurgical Combine has invested \$50,000 in two small boilers and created an energy management system, per the recommendations of ESCO-Vostok.

The two other plants currently in the program are **Rosava** Tire Plant and **Stalkanat** (a steel cable producer in Odessa). Rosava Tire Plant plans to finance the recommended upgrades to its compressed air system as part of a \$125 million modernization and privatization package that it has just signed. The recently-completed recommendations for Stalkanat include a \$1.7 million modernization of the light and galvanized cable lines, and \$790,000 of other energy efficiency measures. Stalkanat has already begun installing piping insulation and

submetering its energy use based on the industrial team's recommendation. The most recent financial statements show that Stalkanat's financial position continues to improve, to a large extent because of its dynamic marketing team.