



Northland Power: Electricity for Ukraine

Modernizing Kyiv's Darnytsia Power Plant

Events have started heating up recently around the Darnytsia Power Plant in Kyiv. Since June of 1992, serious discussions have been taking place between Canada's Northland Power, and Minenergo, the Ministry of Energy and Electrification of Ukraine. They are jointly looking to modernize and rehabilitate the inefficient existing 40-year-old Darnytsia Power and District Heating Plant. Four years of discussions, near-agreements, changes of Minister, more discussions. Finally, during a private meeting with President Kuchma in the course of the G-7 summit in Moscow on April 22, Prime Minister Chrétien inquired about the status of the project. Government telephones in Ukraine began to ring, bureaucratic pens began to scribble, and things may be moving. It is anticipated that Canada's Minister of Foreign Affairs, the Hon. Lloyd Axworthy, will travel to Kyiv in the near future to join the agreement-signing on the project.

Northland was one of the first companies to recognize Ukraine's business potential, having previously purchased Ukrainian transformers for one of its power plants in Canada. "Those transformers have never let us down," acknowledged Jim Temerty, President of Northland Power, addressing the "Ukraine and Partners XX-XXI" Business Conference recently in Toronto (*See stories in this Monitor*). Northland intends to make full use of Ukrainian equipment and know-how in its joint venture with Minenergo, complimenting it with its own successful track record, project management skills, financial know-how, technical expertise, and knowledge of modern technology. The company is not only one of Canada's leading power developers, it is also one of the largest private power suppliers to Ontario Hydro, North America's largest electrical utility. Together, Northland and Minenergo hope to make Darnytsia a showcase for Ukrainian and western cooperation as well as Ukrainian technology and expertise in the energy sector.

The choice of Darnytsia Power and District Heating Plant as Minenergo's first joint venture project with Northland Power was not difficult. Ideally located in the accessible and highly visible capital region, Darnytsia is the only source of domestic heating and hot water supply to several hundred thousand residents living on the left bank of Kyiv. It also supplies steam and hot water to industrial and commercial users in the area, as well as electricity to the regional grid. Darnytsia was commissioned in the early 1950's and at one time, its electrical generating capacity was as high as 250 MW electrical output. It currently has a rated electrical capacity of 160 MW and a rated heat

output of 3.38 million Gcal. The plant burns natural gas, however it also uses oil and coal during peak demand conditions in winter.

Today, the plant is over 40 years old and needs significant and expensive reconstruction to extend its useful life. Darnytsia cannot be shut down and replaced because available

land in the capital region is scarce, and the cost of connecting a new plant to the existing thermal and electrical power grids is prohibitive. The Kyiv energy supply system is very vulnerable because of ongoing problems at Chernobyl. Because the area already suffers severe industrial pollution, it is necessary to reduce emissions at Darnytsia. Finally, modern technology can be effectively applied at Darnytsia to generate additional energy more efficiently.

Energy Sector Reform

The energy sector of Ukraine has been identified by the Ukrainian government, as well as by the G-7, the World Bank, EBRD and other international financial institutions, as one of the critical sectors requiring major reforms to improve efficiency and effectiveness. In addition, because of Ukraine's dependence on costly fuel imports, it is also important to quickly rehabilitate existing plants to conserve scarce resources as well as protect the environment. Furthermore, the sector is on the verge of bankruptcy. Increased fuel costs, high inflation and electrical tariffs no longer cover costs of production. State price controls and vast buildup of arrears from consumers means that there is a lack of funds to purchase fuel, make repairs or to invest in new technology.

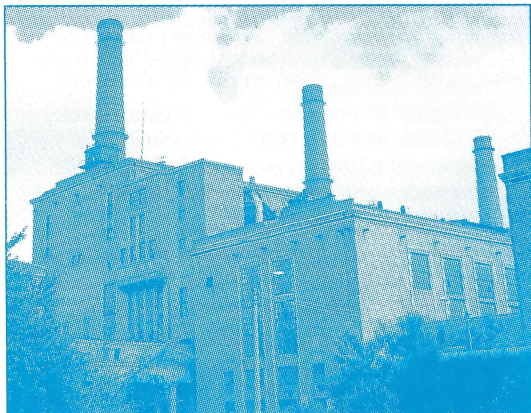
Finally, in cooperation with other ministries and funded by the World Bank and other international donors, Minenergo recently unveiled a plan for the restructuring of its energy sector to replace the vertically integrated state monopolistic energy system. While retaining the energy sector's policy making and research activities with the Ministry of Energy, the plant intends to introduce competition in power generation and independent power supply and to make power sector regulations transparent. It also intends to transfer the power sector's day-to-day management to corporate entities.

The new energy sector's structure now puts into place the framework for a fair price which will be defined in a competitive and fair energy market, reflecting costs and offering an adequate return on investment. Demand, created by the local suppliers, will dictate which generator will dispatch or sell its power based on the price offered. Those with higher prices may find that their power is not required and this will encourage improvement in their power generation efficiency in order to lower the selling price. This will benefit consumers as competition will drive energy prices down. This will also benefit Ukraine as a country since this competition will encourage efficiency and therefore a reduction of fuel imports. Ultimately, this will also create jobs as well as business opportunities for Ukrainian firms as foreign investors will be encouraged to come forward with capital to finance improvements in plant efficiency.

Co-generation Project Proposal

The Darnytsia project envisages Northland Power arranging financing for over US\$110 million. "When you consider that the entire private sector foreign investment in Ukraine for 1995 was US\$250 - in fact, the past five years together have only totalled US\$750 million - \$111 is serious business for Ukraine," stated Victor Pergat, Northland's Director General for Ukraine, as he prepared to head back to Kyiv from Ottawa to see what Ukraine's recent Prime Ministerial shuffle would hold in store for the project (*See story on page 7*). It is planned that funding for the huge project is to be obtained partially in credits from the European Bank for Reconstruction and Development (EBRD).

The intention is to reconstruct the Darnytsia power plant and increase its capacity from 160 MW to 300 MW of electrical and 640 MW thermal power. A significant improvement in overall efficiency can be realized through the reduction of heat loss currently associated with the generation of electricity. The proposed scheme is based on adding a combined cycle system consisting of two gas turbines with two



Kyiv's 40-year old Darnytsia Power and District Heating Plant proposed for rehabilitation by Northland Power.