

EASTERN BALTIC SEA UNDER VOLTAGE

The energy sector of the eastern coast of the Baltic Sea offers a mirror that reflects problems and achievements in power engineering in the European Union in general. Those capable of forecasting the need in that or another type of energy and supplying it to consumers at optimal prices reap the fruit of their effort today.

The energy situation in three post-Soviet Baltic countries differs from each other. Latvia has fully exhausted the resources of the major Daugava River in the region as nothing can be added to the existing cascade of hydropower plants there. Estonia generates power at Narva hydropower plant and heat plants and also receives electricity from Finland. Experts call for the construction of a liquefied gas terminal. Lithuania shut down the Soviet-built nuclear power plant and there is talk about the construction of a new one. It seems Lithuania lags behind the cherished dream of energy independence most of all.

How can the goal be achieved?

GREEN, BUT UNPROFITABLE

"Green" energy and co-generation (combined production of electricity and heat) are the most promising types of energy. It is disappointing that the "green" energy support system, say in Latvia, is branded as "political business".



The country remembers the recent story of the construction of small hydropower plants which "accidentally" got into the hands of the wives of high-ranking state officials. Today any production of bio energy is also linked in Latvia to businessmen who are close to authorities. One cannot but agree with Economy Minister Daniels Pavluts who called for reforms and transparent energy management system.

The economy ministry submitted to the government its initiatives aimed at introducing new transparent and efficient standards of support to renewable sources of energy and co-generation. The EU works to increase the share of renewable energy in the total power end-use to decrease reliance on fossil fuel. Latvia has pledged to achieve 40% of renewable energy in the total balance by 2020. "I am convinced it is

green speculators at the expense of the taxpayer," the economy minister said.

The obligatory purchase principle is currently in force in Latvia to support "green" energy producers: Latvenergo utility has to pay for renewable energy and co-generation much more than the market price. The difference is paid by all end-users, i.e. by every resident of the country.

an important goal and we have to support alternative energy producers. However economic growth possibilities and improved well-being of people cannot be sacrificed for the sake of statistical indicators. We cannot allow Latvia to preserve inefficient and non-transparent system under the cover of movement towards the conditional EU goal. The system has already created a new elite of

What is to be done in the situation? Naturally, cost efficiency of production has to be improved and the policy of endless subsidies has to be gradually abandoned. Lithuania and Denmark guarantee support to electricity producers for ten years, Hungary - 8, Estonia provides its current 7-year discounted tariff to the plants operating with biomass and hydro energy. There is no other country in the EU



besides Latvia that provides unlimited support to renewable energy.

"I hope that in 2020 when we assess the implementation of the National development plan we shall state that the dream about green, economically feasible and competitive Latvia has come true and was no disappointment," said optimistic Daniels Pavluts.

VYSAGINAS SWORD

There is also atomic power besides alternative energy sources. The construction of the Vysaginas NPP is on the Lithuanian agenda. Initially it was planned to engage neighboring countries in the construction but Poland and Estonia delicately refused. The Latvian position remains unclear.

Visaginas is said to be very lucrative for Latvia, however nobody has provided any convincing evidence. Politicians and their close businessmen claim the co-ownership of the plant will provide cheap electricity to Latvian consumers. However nobody explains how it is possible to buy electricity below market prices. There is no answer how the used nuclear fuel

will be disposed of. Who and where will keep it? The hypothetical Latvian billion euro suggested for investment into Vysaginas NPP can be used for other guidelines.

"Latvia has to invest a billion euro not into Lithuanian economy and the construction of Vysaginas NPP, but into its own economy," said President of the gas company Itera Latvija Juris Savickis. Although he represents competing industry he supports not only the construction of Vysaginas NPP but also the nuclear power plants in Belarus and Kaliningrad enclave of Russia. But he insists Latvia has to limit itself by bids for partial assignments in the Vysaginas project which will be fully controlled by Lithuania and the strategic partner - the Japanese Hitachi Corporation.

The nuclear project in Vysaginas is not just a power plant. It is a major and profitable project for Lithuania which will push the ailing economy from the deadlock. "I know the neighbors and have no doubt that most orders for the NPP will remain in Lithuania and that Lithuanians will win the tenders. Everything which Lithuania is capable of producing for the NPP will be made in the country. Naturally, Lithuanians cannot make the turbine while uranium will be supplied by Americans who cooperate with Hitachi," Savickis said. Who will control the whole project? Lithuanians and Hitachi. However Vilnius is interested in getting the Latvian billion euro...

What can Latvia build with the billion? For example, a big gas storage in Doble and its own liquefied gas terminal. It is an expensive project but it will be owned by Latvia. The billion can be invest-

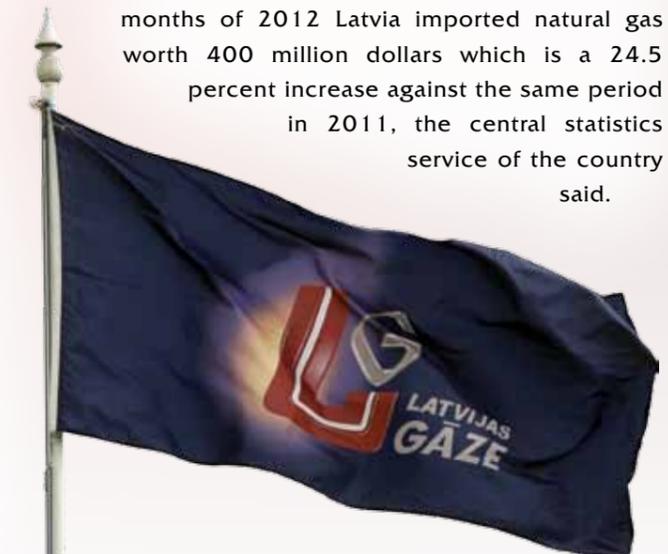


ed into "green" power. Besides power engineering there are related industries which need investments.

It is also important that Lithuanians did not support the NPP project at a consultative referendum held together with parliamentary election. The NPP was backed by 34.09 percent of voters while 62.68 were against.

GAS PUZZLE

Baltic countries have no commercial gas reserves and buy the fuel in Russia. In seven months of 2012 Latvia imported natural gas worth 400 million dollars which is a 24.5 percent increase against the same period in 2011, the central statistics service of the country said.



Gas to Latvia is imported by the Latvijas gāze Company which pumps it into the Incukalns storage and then delivers it to Latvian, Estonian, Russian, and Lithuanian consumers. Gas to Latvia is supplied by Gazprom and Itera Latvija which is a part of the international Itera Group. In 2011 the supplies were worth over 200 million dollars or 52.2 percent above the 2011 figure. Profit exceeded 16 million dollars and was 60.9 percent above previous indicators, according to the financial statement of the company.

Lithuanian Energy Minister Jaroslav Neverovic said his country wants to ensure competitive gas prices at talks with Gazprom. Key to the aim is the construction of a liquefied gas terminal. Lithuania wants to build it in Klaipeda in order to supply also Latvia and Estonia. Latvian experts believe it is more profitable to build the terminal in Latvia as it already has developed infrastructure and an underground storage in Incukalns. There is also a good site for a new storage on the border with Lithuania. According to research, the storage can decrease Baltic reliance on Gazprom from 100% to 59%.

There are alternative points of view in the dispute about the liquefied gas terminal. Thus, the Booz&Company consultancy believes it is more profitable to build it in Estonia or Finland rather than in Lithuania or Latvia.

SHALE GAS

The basic technology of shale gas production was borrowed by the Americans from Nazi Germany which had no oil and had to learn how to produce synthetic petrol from coal.

In Europe shale gas resources in-place are estimated between 19.4 and 91.4 trillion cubic meters. Extractable reserves are estimated at 15 trillion cubic meters. The U.S. Energy Information Administration puts the figure at 22.6 trillion.

The main shale gas deposits are located in northern Germany, France, Great Britain, Norway, Sweden, Poland, Ukraine, and Baltic countries while extractable reserves of the shale gas, according to the estimates of the U.S. administration, are accumulated in Poland (6.6 trillion

cubic meters), France (6.4), Norway (2.9), Ukraine (1.5), Sweden (1.4), Denmark (0.8), and Great Britain (0.7 trillion cubic meters).

Main shale gas, gas and coalbed methane basins in Europe



The estimates made over 40 countries prospect for shale gas in Europe close to consumption areas which minimizes transportation costs. They include Shell, Chevron, Exxon Mobil, Conoco Phillips, OMV, Halliburton and other giants. Poland, Hungary, Sweden, Spain, France, and England are experiencing a genuine shale gas boom triggered by the hope to repeat American shale gas revolution.

However there are skeptical voices as well. Head of the British energy regulator Office of Gas and Electricity Markets Alister Buchanan said shale gas production was unlikely to begin in Eu-

rope earlier than 2025 and production volume can reach 15 billion cubic meters by 2030. BP estimated total European production of all non-traditional gas (shale, coalbed methane, etc) at 50 billion cubic meters by 2030. Therefore, im-

ported gas will continue to play a major role in supplies for a long time. BP estimated it will account for 75 percent of gas consumption in the EU by 2030. Over a half (nearly 60%) will be supplied by pipelines.

Latvian scientists are in general skeptical about shale gas production in the country. However some politicians promise "to liberate" Europe from Russian natural gas at the expense of Latvian shale gas.

Latvian geologist Lyudmila Kartunova said Latvia is rich in all elements of the Mendeleev table. However, the entrails, like in most European

countries, differ in structure from North America. It might be cheaper to fly to the Moon for some natural resources than produce them at home.

NO SENSATIONS

Latvia plans to have a half of renewable energy in its balance by 2030. "At present Latvia produces first-generation biofuel from rape and grain. Production will continue for some time however the products do not satisfy durability criteria. Transition to second or even third generation of biofuel is expected by 2030. In 2017 Latvia may get a refinery to produce biofuel from wood," said State Secretary of the Latvian economy ministry Juris Putse.

Properly purified rape seed oil used to produce biofuel is also suitable for food consumption although it depends on personal taste. Unfortunately, over a half of all fields in Latvia continue to grow the beautiful but very harmful plant for agriculture.

What do Baltic countries have to do to ensure energy independence? Anyway they shall not expect sensational solutions.

For example, Latvenergo plans to reconstruct the cascade of Daugava hydroelectric power plants by 2021 and replace all 21 turbines to increase their capacity. By now eight out of ten turbines of the Plavinas hydropower plant and four out of seven turbines of Keguma plant have been reconstructed. Investments exceeded 200 million dollars but will generously repay.

Prospects to reduce prices are offered by the planned construction of three nuclear power plants which is too many for the small region.

Wind turbines are promising on the sea coast.

What else? There are forests and marshes, wood and peat. However firewood would hardly keep the region warm.

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