

TERMINALAS

Residents of Klaipėda will not hear, tourists will not notice, but the economy will be enlivened P.3



Machine-tools are already in operation at the shipyard

Hyundai Heavy Industries Co., Ltd. started the construction of the vessel-storage facility with a regasification unit for the Lithuanian LNG terminal.



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Act jointly so that the vessel has a place to moor

The Liquefied Natural Gas (hereinafter – LNG) Terminal is a good example of a wise decision that Lithuania has taken in the course of the past twenty years – says Dalia Grybauskaitė, President of Lithuania, a special guest to the issue. The President invited all responsible institutions to work jointly and duly complete all preparatory works as scheduled, so that in 2014 the captain has a place to moor the modern vessel-storage facility.

Lithuania will be one of the first countries in the region that managed to build and launch into operation the LNG terminal. Why is that so signifi-

cant in the international context?

The LNG terminal is an actual step of our country towards the energy independence. So far we have been isolated from the global natural gas market, therefore purchasing the gas from the only supplier, i.e. the Russian company Gazprom.

Having built the LNG terminal and accordingly adjusted the infrastructure of gas pipelines and the gas storage facility we would be able to supply gas not only to Lithuania, but also to Latvia and Estonia.

Eventually, the terminal is a good example of a wise decision. It is not only financial but also our geopolitical situation that drives us to seek the most optimal solutions.

The financial solutions required for the implementation of the project were found in cooperation with our Norwegian partners and the Klai-

pėda State Seaport Authority. This terminal is a solution most acceptable to us both for its cost, the space sparing structure, ability to be expediently constructed and launched into operation.

What will be the effect of the terminal upon each resident's life?

We are creating this alternative in order to liberate ourselves from the current gas supply monopoly, therefore the natural gas price should be lower. By implementing the LNG terminal Lithuania is starting to create the gas market. The market that is being built to bring an alternative to the expensive Russian gas and competitive prices to residents. This is of utmost importance not only to the production of heat, but also for electric energy. The project will also ensure that in case of a

termination of the gas supply from one source we will be able to receive gas from elsewhere.

The LNG project is in its halfway. Which factors will determine the implementation and completion of the project on a timely basis – at the end of 2014?

All institutions related to the operations of the terminal must work in cooperation and assist each other. The most important task is to complete the Klaipėda Seaport deepening works on time – they will determine the terms for the construction of the embankment, and thus the beginning of the operation of the terminal itself. A task of utmost importance is to connect the LNG terminal to the main pipelines on a timely basis. The LNG terminal vessel storage facility with a regasification unit will be constructed in 2014 in South Korea, therefore we need to complete the works on time so that the vessel would have a place to moor.



“LNG terminal will be able to supply gas not only to Lithuania, but also to Latvia and Estonia”

Commissioner: “Gas is gas, and in Vilnius it does not have to be more expensive than in Paris or Berlin”

The European Union market is a common market, therefore the gas price in individual Member States should not be different, said the EU Energy Commissioner Günther Oettinger during his visit in Vilnius. “We need fair conditions. In the long

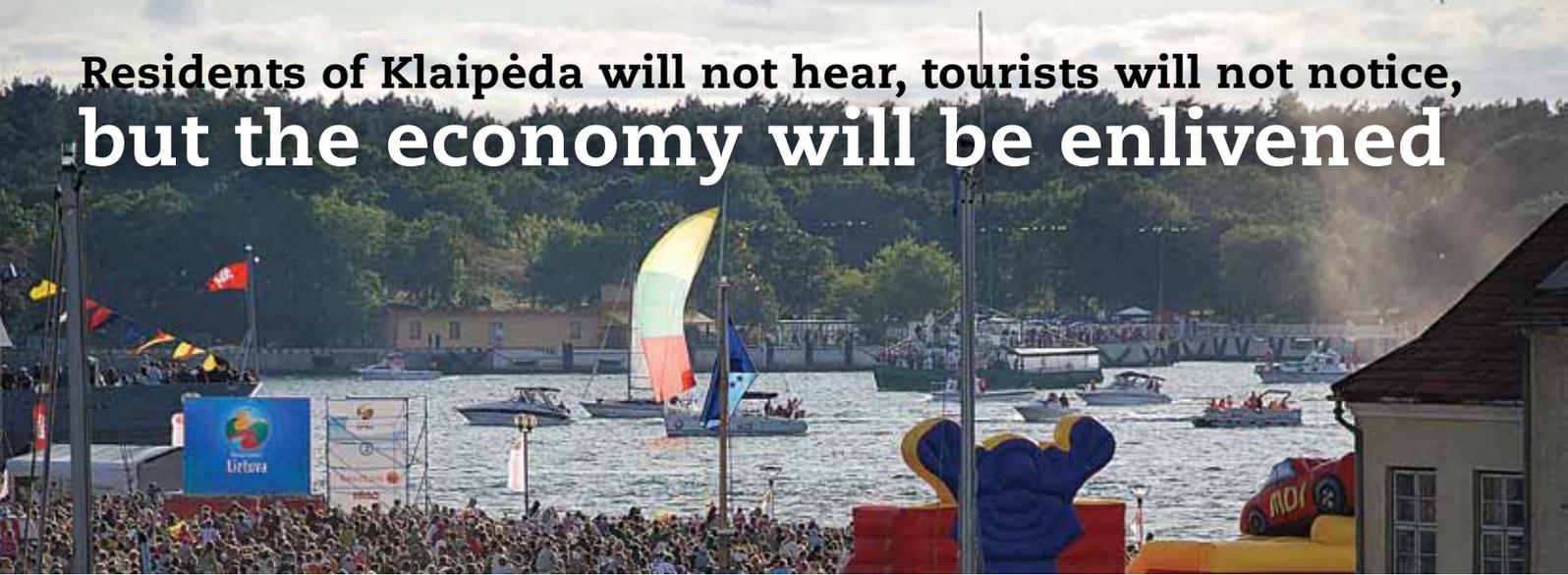
term we will have to do away with the different gas prices. Gas is gas, and the gas price in Berlin or Paris is much lower than in Vilnius”, said the EU Energy Commissioner.

At the eve of Günther Oettinger's visit to Vilnius the European Commission

started a formal inquiry concerning possible abuse of its monopoly position by Gazprom. The Commission currently is considering three charges: that Gazprom operating in the common market of the EU trade in gas with individual States only; the company prevents the

entry into the market for new gas suppliers, and that the company unfairly relates gas prices to oil prices. Gazprom is supplying to the EU one fourth of his annual demand. In the Baltic States this State-owned Russian company is the only supplier of gas. *Lrytas.lt*

Residents of Klaipėda will not hear, tourists will not notice, but the economy will be enlivened



The installation works for the LNG terminal embankment and the gas pipelines construction are just about to be launched – this undertaking will employ at the construction sites about 120 specialists and workers, and about 600 more additional jobs will be created in related sectors of economy.



Questions of the “Terminalas” are answered by Irena Taraškevičienė, project manager of Sweco Lietuva, who in cooperation with other specialists conducted surveys on the impact of the LNG terminal upon the social and economic environment and public health in the region.

Strong economy means prosperity for a country's residents. How will the LNG terminal promote the economic development in Lithuania and Klaipėda region?

The most prominent positive effect of the LNG terminal will be upon the national economy. As measured by gas consumption volumes for 2010, Lithuanian residents every year spend about LTL 3.5 bn to purchase natural gas from the current supplier Gazprom. Having ensured competitive gas supply conditions Lithuania could purchase natural gas at prices at least 10 % lower than at present and thus save up to LTL 350 million per year. The saved funds could

be channelled to other sectors of economy which would be enlivened thus benefiting each of us.

The city of Klaipėda and the surrounding region will benefit economically also from the very construction of the port facilities related to the terminal and the laying of the gas pipeline. The operator of the terminal will be paying taxes to the Klaipėda State Seaport Authority. The servicing of the construction and operation of the terminal – the supply of water, food, disposal of waste, accommodation sector, etc. – will also produce a positive effect upon the economy of Klaipėda region.

Will the terminal contribute to tackling the unemployment issue?

The terminal will contribute to combating the unemployment – when in operation the terminal will be served by about 30 highly qualified specialists. The staff of the terminal will include some specialists from Lithuania specially trained for their positions. A more tangible positive effect from the terminal upon the labour market is expected during the pipeline laying operations. The construction of the terminal facilities in the port site will employ about 100 workers with another 20 employees involved in the pipeline laying works. Some indirect additional jobs will be created in the terminal construction sector and later on in the sectors servicing the operations of the terminal. It is a common knowledge that one job in the construction sector creates another five jobs in other sectors of economy.

The LNG import terminal – a high technologies facility. In what respect the advent of these technologies and their development are beneficial to the country and the city?

The entry of the high technologies enhances the level of knowledge – all employees will have a possibility to develop professionally and learn. Being employed in a high-tech company by itself opens new possibilities for its employees to develop professionally, which in its own turn makes them more valuable in the labour market due to their higher employability in other high-tech companies. Therefore, companies in the future will find it easier to recruit qualified personnel. In carrying out their oversight responsibilities at the terminal specialists of supervisory authorities will likewise enhance their knowledge and develop their skills.

Tourism and recreation are an equally important part of Klaipėda's life.

The LNG terminal constructed at the Kiaulės Nugara island will have no effect upon tourism or recreation in the Curonian Spit since the terminal will be virtually not visible from any places frequented by tourists or holiday-makers. Thus the flows of tourists in the Curonian Spit will continue as usual – no changes in this respect are anticipated. The new section of the pipeline will neither have any effect upon tourism or recreation, since in any case the pipeline will be built bypassing any protected sites, forests and other objects relevant to recreation or tourism.

When speaking about gas we have learned since our childhood to associate it with a fear of a possible explosion or fire. To what extent this risk is relevant in the case of the LNG terminal?

The explosion or fire risks caused by the LNG terminal have been in detailed assessed by highly competitive risk assessment specialists from

the United States of America. In the course of many years of operation of identical terminals globally there has not been a serious incident at such terminals the effect whereof would spill over their boundaries. The top level security of the terminal is ensured by most modern preventive and accident recovery measures, therefore actually all fears related to natural gas and a possible risk created by the LNG terminal are ungrounded.

Does it mean that the air quality in Klaipėda will not deteriorate due to the operation of the LNG terminal?

The impact of the LNG terminal upon the quality of the air will be totally insignificant. The gas incineration process will emit some substances that will, and only marginally, increase the air pollution; however, even the maximum anticipated pollution accumulated also from the industrial enterprises and transport means in Klaipėda will not exceed the permissible thresholds and will not pose any danger upon the health of residents.

Will residents of Klaipėda, even those residing in the old city hear the operating terminal at night time – or will they have to close their windows in the summer time?

The LNG terminal is not an object emitting excessive noise since the principal noise generating sources will be installed inside the vessel. The LNG terminal will be retracted from the residential areas of the city in the distance ensuring that the noise from the terminal will not have any impact upon the current noise level neither in the course of the LNG terminal construction, nor due to its operation, thus, residents of Klaipėda will not feel any impact whatsoever.

More efficient – at the Kiaulės Nugara island

The environmental impact assessment of the project demonstrated that the most suitable location for the Lithuanian LNG import terminal is in the southern part of Klaipėda Seaport at Kiaulės Nugara island.

This location proved more suitable than the other alternative assessed as an option for the terminal – the site of the import terminal in the open sea at Būtingė. According to

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the results of the comprehensive analysis the location for the LNG terminal in the territory of the Klaipėda Seaport at the Kiaulės Nugara island is more optimal for environmental considerations – this would ensure that preservation of Būtingė grasslands, fauna and flora, and the laying of the pipeline would be of much less detriment to nature. The Kiaulės Nugara island is also more attractive from the technical viewpoint, since it will not require any

complex technological solutions that would be otherwise necessary in the case of the terminal built in the open sea at Būtingė. The economic estimations also showed that the construction of the LNG terminal in the territory of the Klaipėda Seaport would be much less costly – the project will dispense with the breakwater and other costly equipment, also a shorter pipeline would be needed for the connection to the existing pipeline.

THE PORT AQUATORIUM has in place the complete infrastructure for the construction and the operation of the LNG terminal.

THE LOCATION AT THE KLAIPĖDA SEAPORT also ensures the lowest impact of meteorological conditions upon the terminal in operation.

THE CLOSEST POSSIBLE connection to the gas pipeline.

THE FASTEST WAY for technological installation of the LNG terminal.

KIAULĖS NUGARA – an island in the Curonian Sea, the territory of the Klaipėda State Seaport. Kiaulės Nugara island is one of the largest islands in Lithuania, about 800 m in length, and about 200-30 m wide. The name of the island is derived from its prominent form reminding of a pig's back. A support of a high voltage power line has been built in the island; the line leads to the Curonian Spit. The Kiaulės Nugara island is the only marine island in Lithuania abundant in wild bird hatching places.



Geologists surveying the sea bottom

For the entire summer the site of the future LNG terminal at the Kiaulės Nugara in the Klaipėda Seaport was a location of comprehensive geological surveys. The most modern technique was employed for the surveys – the surveys are carried out on the Platform P-360 that is included into the Lithuanian Technical Encyclopaedia and is the only one in the region from St Petersburg to Karaliaučius.

The geologists seek to examine the bottom of the Curonian Sea up to 45 m in depth and obtain the most objective data on the engineering geological composition of the bottom ground. The data are required for the purpose of connecting the underground pipeline to be installed on the shore with the terminal at the Northern part of the Kiaulės Nugara island. The length of the pipe laid at the bottom of the Curonian Sea shall reach about 3 km. The embankments will be connected by a gas pipeline 700 mm in diameter; the pipeline will be laid using a rather complex horizontal drilling technology producing the least impact upon the environment.

“The construction of the terminal requires specifically thorough preparation works, as it is necessary to very precisely examine the engineering geological conditions. Total 12 wells will be drilled in the aquatory of the Curonian Sea between the Kiaulės Nugara island and the Smeltė peninsular in relation to the primary surveys of the pipeline route alone”, says Artūras Šlauteris, Director of UAB Geoprojektas ir Ko. carrying out the surveys.

Vakarų ekspresas.

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Will strengthen the community of Klaipėda



Vytautas Juščius, Head of the Department of Economics of the Faculty of Social Sciences of Klaipėda University

I support the project on the construction of the LNG terminal in the Klaipėda State Seaport, provided it is economically efficient and does not cause any additional ecology-related threats to the city or the port. For the purpose of estimating the economic benefit of the terminal more data is needed to calculate the payback of the investment into the object, the future prices of gas, sale conditions and volumes. Furthermore, the relevant regulations have provided that all companies operating under a gas supplier licence will be obliged to purchase from the LNG terminal not less than 25 % of the total national demand for natural gas. I still am assured that the LNG terminal will contribute to Lithuania's strive for energy independence and safety by making it possible to diversify the natural gas supply sources. Lithuanian economy, and of course businesses and each resident could benefit most from the LNG terminal by paying less for gas. Since the LNG terminal is an object of national, rather than regional significance it shall not have any material direct effect upon the performance of Klaipėda region municipalities. An undoubtedly, such large-scale economic entities like the LNG terminal are also able to support different social initiatives meeting the needs of local communities.

The interests coincide

The energy security of Lithuania and Latvia fully coincide, noted the President of the Republic of Lithuania Dalia Grybauskaitė and the President of Latvia Andris Bērzinis at the debates of the General Assembly of the United Nations. The interest of both States is to create a regional gas market, ensure the gas supply alternatives and lower the prices. Lithuania is in the process of construction of the LNG terminal that shall be also available for use to Latvia – having strengthened the gas pipeline between Klaipėda and Kuršėnai Lithuania will be able to transport gas to its neighbours, while the Incukalns gas storage facility may become a regional gas bank. *BNS*

The USA supports Lithuania's solutions

The Ambassador from the United States of America to Lithuania Anne E. Derse who has completed her term of office said that the USA Government strongly supports Lithuania's strive for energy independence. In the course of the past three years Lithuania moved ahead in her pursuit of energy independence and the energy sources diversification. “Lithuania's situation is exceptional due to historic circumstances and this situation is addressed by implementing more than one project. The United States Secretary of State and other officials expressed their strong support to the endeavours of Lithuania. You yourselves are deciding how to do that but we believe it is very important that Lithuania is moving in this direction”, said A.Derse. *BNS*

Will select constructors

An international tender for the designing and construction of the LNG embankment with the related facilities has been already announced. The successful tenderer will be obliged, by the autumn of 2014, to build the quay at the vessel mooring place, as well as all other structures, pipelines and other facilities to channel the gas from the vessel to the pipeline. AB Klaipėdos nafta, implementing the project forecasts that the works related to the installation of the embankment at the Northern part of the Kiaulės Nugara island may cost up to LTL 65.6 million, however the exact value of the works will depend on the outcome of the tender. Also AB Klaipėdos nafta announced a tender for the designing and construction of the pipeline from the future LNG vessel to the Lithuanian gas supply system; preliminarily, value of the tender is estimated to reach LTL 66 million.



Machine-tools are already in operation at the shipyard

Although the South Korean shipbuilders are not Germans, punctuality and accuracy for them is equally important. After the opening ceremony Hyundai Heavy Industries Co., Ltd. started the construction of the vessel-storage facility with a regasification unit for the Lithuanian LNG terminal.

This memorable occasion was marked with the ceremony of cutting ribbons in the colours of the Lithuanian and the South Korean national flags, and launching the metal cutting tools – the construction of the shipyard started from cutting steel sheets.

“The shipbuilding works launched is a solid basis for the successful implementation of the LNG terminal project. If everything proceeds as planned, in slightly more than two years this vessel-storage facility will be operational in the Klaipėda Seaport”, – said Rokas Masiulis, the General Manager of Klaipėdos nafta.

The shipyard building in the dry dock was the second stage that was started immediately after the completion of the first – the vessel designing stage

Numbers

25,000 tons of metal constructions will be assembled in the vessel. The vessel-storage facility with the equipment will weigh about **36,000** tons.

so timely completed by engineers of Hyundai Heavy Industries.

“It is delightful to see that all works are carried out according to the schedule – this encourages all others to move ahead at the same rapid pace” – says the Manager of Klaipėdos nafta.

The steel cutting works are planned to last until March 2013. At the same time, the keel (the longitudinal beams of the hull of the vessel connecting its head and the tail) and the module assembling will be in progress at the dry dock – this phase is expected to last four months. Later the equipment and the hull of the vessel will be assembled on the water. Prior to departing to Klaipėda, the vessel will undergo specific marine and the LNG system tests using liquefied gas.

The LNG vessel-storage facility with a regasification unit is scheduled to arrive to the Klaipėda seaport in the second half of 2014. The vessel will be delivered by a Norwegian company Höegh LNG that will also provide the terminal maintenance and operation services and staff the vessel with a highly competent crew.

The official commissioning of the Lithuanian LNG terminal is scheduled for the end of 2014.

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How are the LNG vessels built?

Vessels-storage facilities are constructed using regular carbon steel that is otherwise called the light steel. In certain places subjected to largest loads also high strength steel is used, which is otherwise called the special ship construction steel.

The steel cutting process is carried out automatically using the special plasma steel cutting machine-tools. The machine-tool is served by one operator and two auxiliary workers ensuring the uninterrupted supply of materials. The operator is supplied with steel sheets, also coating and dyes. Simultaneously with the steel cutting operations at the dry dock other works are in progress in other workshops – production of the prefabricated steel frames and frames, assembly of modules, sanding and dyeing, production and assembly of pipeline billets, installation of the insulation, heating, ventilation systems and the interior, mounting of the LNG storage systems and installation of the power automation systems.



Höegh LNG ensured the financing for the construction of the vessel

A Norwegian company Höegh LNG received a confirmation from four banks of their readiness to grant a loan of USD 250 million (about LTL 703.8 million) for the construction

of the floating storage regasification unit (FSRU) to be operated at the LNG terminal in Klaipėda. Financing by the banks will be secured by the guarantees issued by the Norwegian

and the South Korea export credit agencies.

Höegh LNG provides the LNG transportation and regasification services, the company has been

active in the market since 1973. Currently it operates the fleet of seven vessels – 3 FSRUs and 4 LNG carriers. The company trades its shares at the Oslo securities exchange.