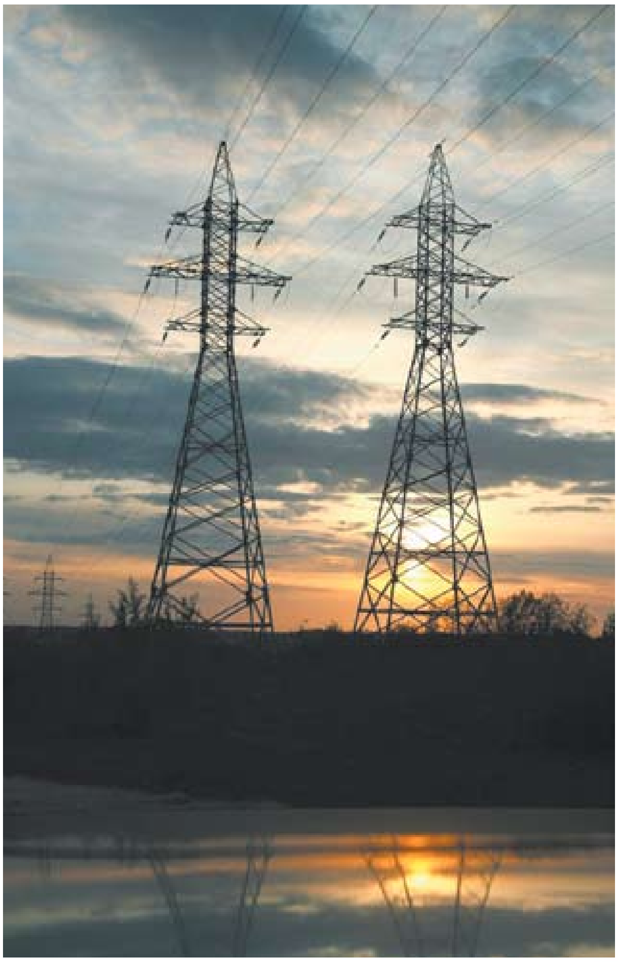
Prime Minister Andrius Kubilius comments on the National Energy Strategy:

"Lithuania, as well as Latvia and Estonia, is isolated from the European Union in terms of energy. Monopolies in the energy sector dictate their prodigious prices and turn energy into a powerful geopolitical weapon. It is the time to turn these dependency bonds into energy independence. We shall prevent any other powers and interest groups from hindering our steps to the energy independence."

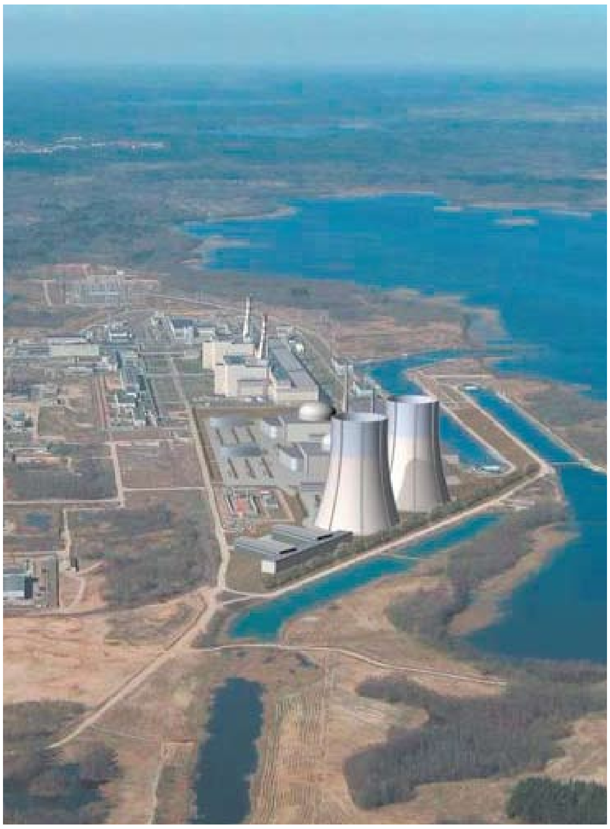
Changes in the Energy Sector of Lithuania

Electricity

- On the 1st of January, 2010 the first Power Exchange market in the Baltic States started its operation. At the moment it markets up to 70 percent of electricity consumed in Lithuania.
- Energy sector reform is undertaken to ensure the compliance with the regulations provided for in the 3-rd EU Energy Package by unbundling energy production, transmission and distribution activities, and to create preconditions for the Lithuanian energy sector to operate in a competitive environment and synchronously with the EU market.
- By January 2011, formation of four functional units - production, transmission, distribution and services - is to be completed.
- The ninth Combined Cycle Gas Turbine is under construction at the LIETUVOS ELEKTRINE, it will be completed by 2012.
- Implementation of the project *NordBalt* interconnection between Lithuania and Sweden has been started. The capacity of the cable will total 700 MW. The cable is expected to be completed by 2015.
- The project *LitPol* Link due to interconnect Lithuania and Poland has also been started to implement. The preparatory works for co-ordination of route and environmental impact assessment have been started. First part of the project is expected to be completed by 2015.
- The project on power distribution unit of 330 kV capacity in Bitenai is planned to be completed by the end of 2010. The distribution unit is to ensure a continuous and direct electricity supply to Western Lithuania without electricity flow to Kaliningrad region and will play a significant role upon commissioning of the *NordBalt* interconnection.



Nuclear Power Plant



- A thorough study has revealed that both projected potential sites are suitable for construction of Visaginas Nuclear Power Plant (VNPP) in terms of geology and hydrogeology. Conclusions of the studies undertaken in regard to potential sites for the construction of the VNPP are necessary for a strategic investor. These conditions and specifications are essential in order to develop VNPP project in compliance with the international safety regulations.
- Designing of routes for transportation of heavy and large equipment during the construction of the VNPP has reached its final stage. Furthermore, 33 topographical plans have been drafted and co-ordinated; initial project proposals have been selected and evaluated; other engineering aspects have been assessed.
- On the 10^{th} of September, 2010 the Ministry of Energy requested potential strategic investors in the VNPP to submit their binding bids.
- Private Limited Company VISAGINO ATOMINE ELEKTRINE along with its partners drafted a study on Opportunities for Local Business Sector to Participate in the New NPP Construction Project and introduced it to the Lithuanian businessmen. It is estimated that the Baltic business sector may potentially aspire to works making up to 30 percent of the total project value, i.e. approx. 4 billion Litas (1.2 billion EUR) of the total average costs of the project.

Renewable Energy Sources

- The map of potential connection points for new electricity producers with indicated permissible capacities and connection points has been prepared and published (www.litgrid.eu).
- The Conformity Programme has been undertaken to ensure compliance with the principle of non-discrimination for the transmission network users by providing them with equal conditions for the access to and operation of the transmission networks.
- LITGRID acting as Electricity Transmission System Operator has approved primary terms and conditions which are designed to estimate technical solutions and investments needed for connecting wind power plants to 110 kV electricity network.
- Implementation of the new project of the fifth hydro-aggregate at Kruonis Pumped Storage Plant has been started. To be commissioned in 2014, the hydro-aggregate will enable regulating the uneven balance of wind power plants stemming from unstable mode of their operation.

Gas

- Preparatory activities for the implementation of the LNG terminal project in Klaipeda have been undertaken.
- Implementation of requirements set forth by the 3-rd EU Energy Package has commenced. The Republic of Lithuania will seek to unbundle the functions of gas transportation and sale by separating gas transmission pipelines from the Company LIETUVOS DUJOS.
- Geological research on the site for the potential underground gas storage (UGS) facility with the total potential storage capacity of 1 bcm is being performed. Designing of the UGS facility in Syderiai will start in 2011 if technical possibilities to store gas are sufficient.
- The building of the Jurbarkas-Klaipeda gas pipeline is under arrangement. This gas pipeline will circle all the Lithuanian gas transmission system.
- Connection of Lithuanian and Poland gas pipeline has been determined. The European Commission has promised to consider possible funding of the project.

Currently Lithuanian energy sector is not fully aligned with the strategic principles

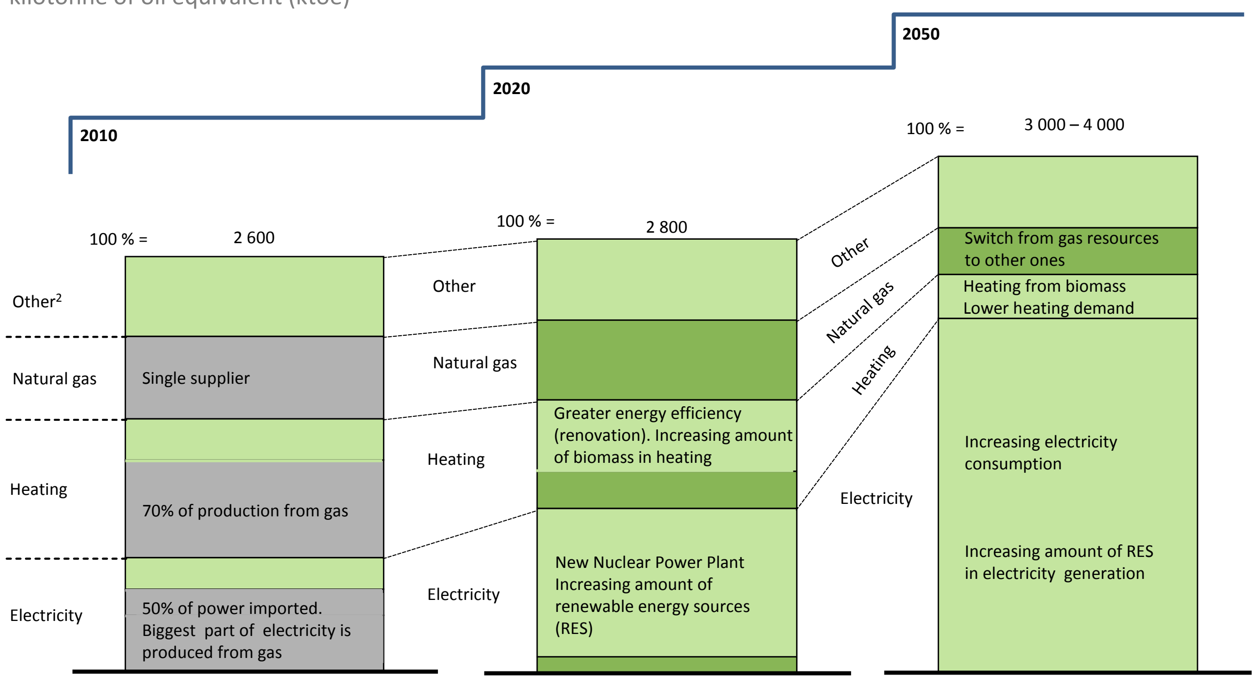
Strategic principles of the energy sector	Current situation
Energy independence	• Single supplier of fossil fuels. • Isolation from the EU energy systems. • Shortage of competitive power generation capacities (approx. half of electricity is imported).
Competitiveness	• Constantly increasing electricity prices approaching EU level. • Potential for improvement through full de-monopolization of domestic market and integration into the EU market.
Sustainable development	• Energy intensity per unit of GDP is 2.5 times above the EU average. • High energy saving potential in the heating sector. • Constantly increasing greenhouse gas emissions.

Most important by 2020

The strategy is to assist in achieving energy independence by 2020

Final energy consumption forecast[1]
kilotonne of oil equivalent (ktoe)

Supply from the single external source
Independent supply
Gas can be imported through LNG terminal (independent supply)



1 Oil and other fuel the supply of which is diversified not included

2 Mostly wood as fuel

Synchronisation with European Continental Networks (ECN) prior to the commissioning of the Visaginas Nuclear Power Plant

Steps of synchronisation with ECN

- Political decision
- Formation of project team and working group
- Co-ordination of specifications
- Investments in infrastructure
- Disconnecting from IPS/UPS system
- Autonomous operation of the Baltic States' system
- Synchronisation with ECN
- Assessment of synchronisation results

Current situation

- Project co-ordination group is formed
- A detailed feasibility study indicating specifications of the interconnection is to be accomplished by 2012

Key targets prior to taking next steps

Political

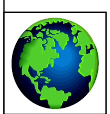
- Continuous cooperation with the Baltic States and Poland
- Disconnecting from the IPS/UPS system

Financial

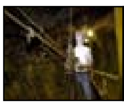
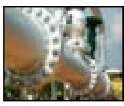
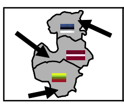
- Financial assessment of all available options
- Disconnection costs from the IPS/UPS system are to be assessed separately

Nuclear power plant is the most attractive choice to diminish power deficit

Nuclear Power Plant is in compliance with all criteria

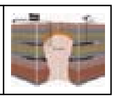
	Criteria	Nuclear Power Plant
	**Energy independence**	• **Energy independence due to the opportunity to import fuel from different states** • **Regional project** – ensuring additional power generation capacity for Estonia, Latvia, Lithuania and Poland
	**Competiti-veness**	• **A positive impact on the balance of trade** • **A potentially positive impact on economy** • **Economically most advantageous alternative**
	**Sustainable development**	• **Environment not polluted with CO_2** • Easier achievement of compliance with the EU regulations on CO_2 emissions

Alternative power generation

	Alternatives	Disadvantages
	**Coal**	• **High rates of environmental pollution** • **Economically disadvantageous alternative** due to high cost of the CO_2 pollution permits
	**Gas (trough gas pipeline)**	• **Poor energy independence** – fuel from one supplier • Expenditure for gas import within a decade equals to the construction costs of the Nuclear Power Plant
	**Gas (trough LNG)**	• **Business pattern is unfavourable due to fluctuating cost of fuel**
	**Electricity import**	• **Poor energy independence** • A negative impact on the balance of trade

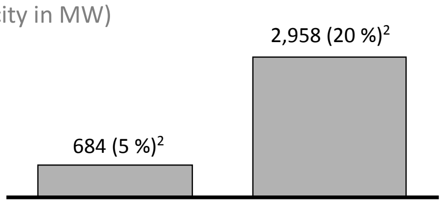
LNG terminal (potentially in operation with the gas storage facility) is the most advantageous alternative to ensure gas supplies

Most advantageous alternatives

	Key advantages	Key disadvantages
A LNG terminal 	▪ Function of emergency reserve ▪ Access to the EU gas markets ▪ Diversification of supplies ▪ Relatively low cost of subsequent development	▪ Gas cost price is higher than operating the gas storage facility ▪ Participation in the gas market requires new skills and qualifications to exploit any and all price arbitrage opportunities
B Gas storage facility 	▪ Relatively inexpensive ▪ Total emergency reserve physically accumulated in Lithuania	▪ Supplies are not diversified ▪ Long and high-risk construction period
C Gas pipeline to Poland 	▪ Comparatively attractive amount of investments	▪ Functionality highly depends on terms and provisions between participating parties ▪ Additional investment in changing the route of the gas supply via the *Yamal* gas pipeline to ensure functioning emergency reserve may be required
D Combination of the LNG terminal and storage facility 	▪ Balancing of seasonal demand (summer/winter) ▪ Higher gas storage capacity than just operating the tanks of the LNG terminal	▪ A time consuming process of the gas storage facility development ▪ Potential sites may be unsuitable for the installation of a gas storage facility ▪ Higher investments in ensuring functioning of an emergency reserve than in case with a LNG terminal may be required

Higher share of RES in power generation is to be achieved by the use of biomass and wind power

GWh produced / (capacity in MW)

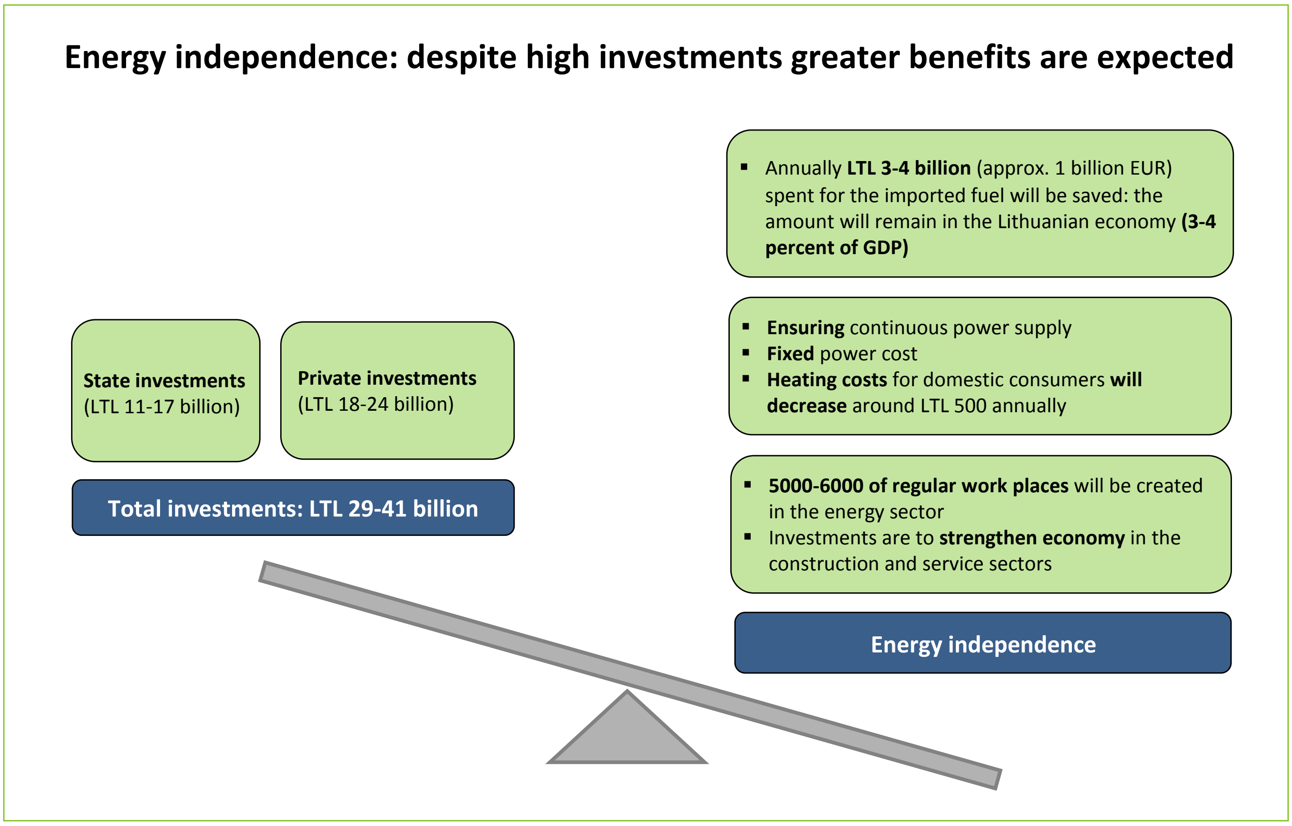


RES	2009	2020	Extra capacity 2020 MW	Investments [3] LTL billion	Impact on end cost of electricity ct/kWh
Hydropower[1]	424 (116 MW)	470 (141 MW)	25	0,3–0,4	• Subsidy (0,1–0,2)
Wind power	158 (98 MW)	1 250 (500 MW)	402	1,0–1,4	• Subsidy + system costs (0,9–1,1)
Biomass	102 (26 MW)	1 223 (224 MW)	198	1,0–1,4	• Subsidy (0,6–0,7)
Solar energy	-	15 (10 MW)	10	0,2–0,3	• Subsidy (0,1–0,2)
Geothermal power	-	-	-	-	
		875 MW	**635 MW**	**2,5–3,5**	**1,7–2,2**

1 Excluding Kruonis Pumped Storage Plant

2 Of all electricity consumed

3 Mostly private investments



Struggle of Interests in Energy Sector

Ministry of Energy has drafted the Lithuanian energy independence strategy. What is the main goal of the strategy? Why does it bear significant importance on subsequent developments of the State? What threats will we encounter when implementing the strategy?
All about this in our interview with the Minister of Energy Arvydas Sekmokas.

- When Lithuania declared its Independence, in spring of the year 1990 an economic blockade was initiated against the country. As many as 20 years passed and in 2010, when Lithuania declared its energy independence strategy, we have already heard some threats related to the interruptions of gas supplies from Russia. Does not the nowadays situation resemble you of the one in 1990?

- Upon declaring our Independence in 1990, we entered the European space in political, legal and economy terms with its completely different rules, more transparency, where relations were based not on ideological assumptions but on the laws of economy.
Despite the European Union membership from 2004, we are still a part of the Eastern energy system. This actually means that though belonging to quite a different community, we still form a part of another one with totally different relations and quite opposite laws, where energy policy is used as a weapon of political pressure, and where the non-transparency is acceptable and tolerable.
We do not have to look far for examples: termination of oil supplies via Druzhba oil pipeline, Gazprom's pressure on our Government to abstain from implementing the EU directives, for instance, and sales of gas for prices by one third higher than it is sold to Germany.
Therefore, our goal is distinct and logical – to escape from the Eastern energy space and join the community we actually belong to. This is our aim. Undoubtedly, we will face strong resistance as some of stakeholders' interests will be oppressed. Interests of those who are actually taking the advantage of the non-transparent relations that the energy sector was overwhelmed over a long period.
Yes, definitely we are getting back to the situation we faced in 1990, maybe not to such extent and not at such level. However, it is not less stressful, mostly due to financial interests, which are more distinc

tive and obvious.

- Some so-called energy experts already entitled those strategic projects on ensuring the energy independence as blue-dream set. That sounds weird, especially when we know that all of the projects are in progress; they have received the EU funding and actual work is undertaken. Don't you think you will have to listen to numerous misleads or even straight face lies?

- Lithuania could save LTL 3-4 billion for the imported energy resources annually. Energy resources are imported from the single supplier operating in the Eastern energy space. The goal of the strategy is to retain the aforementioned financial resources in Lithuania, in the Lithuanian economy, to increase our economy competitiveness and improve our economy situation.

However, we must get ready for a raging and tough rival inspired by huge cash flows. There is no doubt we will have to encounter with a number of interest groups willing to grasp a significant portion of the cash flowing out of Lithuania. The tough rival will stimulate an enormous resistance that we are already facing when trying to make our steps to restructure the energy sector.

I suppose it is not correct to claim those projects resembling a blue-dream or a goodwill set, as within their implementation they are gaining their actual shapes. I would not call those projects and goals thereof to be dreams. I would rather point out political will and administrative skills we should be ready to employ in order to implement the projects.

- When asked about the causes hindering development of the LNG terminal, Mr. B. Lubys, President of the Confederation of Lithuanian Industrialists, retorted: We had a wrong priest. Why were this and all the projects launched just a little while ago, is it because no one really cared about?

- Maybe I should refer to the 1990-ies again. At that time there was public opinion which grew into political will. The nation said yes to the Independence, and its will had encouraged political changes.

What does our society face now? After the Ignalina Nuclear Power Plant was closed electricity prices have wounded up. But this is not the message to refer to. The major threat should be pertained to the fact that we have become absolutely dependent on the single supplier of energy resources. Even though we produce electricity ourselves we are dependent on that external gas supplier. Same situation is with electricity import reaching us from the same direction. Upon closing the Ignalina Nuclear Power Plant we have actually once again encountered situation of energy dependency and since then many of us have opened the eyes.

What does the dependency mean? At this very moment we are paying for electricity by 5-10 percent more because we buy gas for the price by a third exceeding the prices Western Europe is paying. And nobody can assert the price will not be increasing at the same pace as it did since LIETUVOS DUJOS has been privatised. Since then the price of gas has increased by four times.

Same pertains to electricity the import of which amounts to 50 percent. Who could guarantee that the cost for electricity imported from Russia and Belarus would not increase in the same manner as it had happened with natural gas?

Situation in the heating sector is even more distinctive. Difference in cost of gas increases the cost of heating by 20 percent.

The aforementioned facts are a clear proof of the price we pay for the dependency and lack of transparency caused by dominating monopolies, which leave the interests of consumers far behind.

Why did not anybody care about it? Partially, the energy sector was quite a closed system exploited by the interest groups. The way not to make any changes is less complicated. Changes are often related to resistance and unfavourable decisions.

That was a less complicated choice, irrespective of outcomes to be overcome after privatisation of LIETUVOS DUJOS, irrespective of the necessity to take care of supplies of electricity after the Ignalina Nuclear Power Plant was closed, irrespective of the consequences in case of the failure to comply with the EU regulations related to the timely decommissioning of the Ignalina Nuclear Power Plant. Yes, it is easier to live for the day. However, the situation changes and everyone finds it impossible to make the living just for the day.

All the aforementioned issues fell on the shoulders of the Change Coalition. At the given moment, namely the Prime Minister and the Cabinet of Ministers demonstrate their political will to change the existing situation and escape from energy dependency.

- Several weeks ago the EU Commissioner for Energy Gunther Oettinger titled Lithuania as an example for the entire Europe in regard to changes in the energy sector undertaken to the consumers' benefit. That was how the Commissioner assessed the efforts of Lithuania to restructure national gas sector in order to comply with the 3-rd EU Energy Package. But the European Union itself has just woken up after the situation in January of 2009 during a so-called Ukrainian crisis when the gas supply was terminated to most European states.

- One of the cornerstones of the European energy policy pertains to continuous security of supply. Lithuania has expressed the goal in more lucid terms – it is not just a security but actual liberation from the energy dependency. Security of supply issue is even raised by Great Britain though its positions are much better.

Recently, an active energy policy has become a challenge for the most of Europe. It can be explained by the outcomes after the accident at the Chernobyl Nuclear Power Plant when nuclear energy generation was stopped to develop. There were no obvious changes in energy generation. Just upon the definition of climate change issues, feasible development towards the use of the renewable energy sources was perceived. However, it soon became evident that the use of renewable energy sources was just one of the measures, first of all due to significant cost of technologies.

Therefore, the energy concept until the year 2050 adopted by the German Government and introduced by its Chancellor Angela Merkel names nuclear power as a bridge into the use of renewable energy sources. Our energy strategy is similar to the German one and is based on the same provisions.

- 3-4 billion Litas every year settling down in the Russian pocket should remain here, in Lithuania. It is one of the main goals of the Lithuanian energy independence strategy. This huge amount feeds a lot of mouths, therefore, it is hard to withstand Gazprom and other powerful interests and their lobbyists. Are not you scared of it?

- Again, if to compare current situation with the one in 1990, then we faced an economic blockade and pressure of foreign army. Nevertheless, the nation's will, which grew into the political will to live in an independent state, was more powerful.

It is impossible to defeat the state on its territory – the state may be scared of, it

can be hesitant to make a particular decision. That is why we are talking about the political will. I believe, as in 1990, Lithuania will achieve its goal to reach energy independence. In order to do so, we must be strong, persistent, consistent and united.

- It's nearly half of the term of your office. What did you think it would be impossible to achieve two years ago? And what project are you under the obligation to mostly?

- Since the time when the Ministry of Energy has been established, we have been striving for the energy independence, as well as for ensuring and protecting interests of energy consumers. We needed some time to clearly and precisely define our goals and develop the strategy of energy independence. This strategy and its implementation are our major goal and target.

We will reach this goal with the help of a number of strategic projects, i.e. installation of electricity and gas connections, synchronisation of electricity systems with the European Continental Networks, implementation of the Visaginas Nuclear Power Plant project, development of LNG terminal, etc. They serve to ensure our energy independence, to turn our energy from a geopolitical weapon to a part of economy, and to help Lithuania finally become a real member of the community we have been in since 1990.

- When do you expect those projects to reach a particular point of development where the processes are irreversible and independent from the opposite political will?

- Approval of the Energy Independence Strategy in the Parliament will express clear and distinctive position, as this strategy must be adopted by all the parliamentarian fractions expressing the will of major political parties. That is how the foundation will be built. I think the main factor for the processes to become irreversible pertains to expectations of our society, i.e. transparent energy sector, alternative energy supplies, possibility to provide ourselves with energy resources.

Speaking in terms of specific projects, I have no doubt that *NordBalt* – a project to connect the Baltic States and Scandinavia – has already reached that point of irreversibility. Soon we will have a strategic investor in a Visaginas Nuclear Power Plant , and I think that next year we will start the implementation of the LNG terminal project.

German Coalition Government Reaches Agreement on Energy Concept until 2050

On September 5th, 2010 after long debates and great interest from the public, i.e. discussions in press, an open letter from the largest German companies regarding future of nuclear energy, etc., the Coalition of the Federal Republic of Germany finally reached the agreement on the Energy Concept until 2050 (the agreement was reached at 3 am on the threshold of the Germany Chancellor Angela Merkel's visit to Lithuania). This Concept was approved by the Bundestag at the end of September.

Principal idea is that nuclear energy will become a bridge to renewable energy.

By 2050 CO2 emissions will decrease up to 80 percent (comparing to 1990), by 2020 – up to 40 percent. In the late 2009, 29 percent was achieved.

Power generation shall be based on renewable sources. The Concept stipulates the Guidelines on Ecological, Reliable and Financially Acceptable Energy Supply. Energy Policy shall be free of ideology, open to technology and market-oriented.

By 2020, 18 percent of the energy consumed must be generated by renewable sources, by 2030 it must reach 30 percent, and by 2050 - 60 percent.

Until 2030 offshore wind power plants with total capacity of 25 GW (total capacity of 20 modern nuclear power plants) shall be constructed. The costs would amount to EUR 75 billion. Funding of the first 10 power plant depots shall be ensured by credits up to EUR 5 billion, as well as by other national aids. Old onshore wind power plants must be modernised as soon as possible, and more new plants must be constructed.

Greater significance is given to the biomass. Biogas shall become an additional source enabling to balance uneven power generation by wind and solar power plants.

The Concept also clearly provides for financially efficient and demand-oriented development of renewable energy sources. For instance, when constructing wind power plants, it is necessary to evaluate that instead of using financial aid, public tenders might be more applicable.

To save energy, the understanding and responsibility of the economy and private entities, and not the bureaucracy, is appealed to. In this case, an easily perceived marking of energy consumed on vehicles, devices and buildings must be developed.

It is estimated that German industry is able to save up to EUR 10 billion annually. From the year 2013, energy and electricity allowances shall be applicable only to those companies which are striving for saving. It shall not become a heavy burden to small and medium businesses.

The operating life of nuclear power plants is prolonged on average by 12 years, i.e. 8 years for power plants built before 1981, and 14 years for plants built after the mentioned date. Concerning coal extraction, Germany is ready to terminate extraction following the national and European regulations (the EU has approved the term of 2014, and the German governing Coalition has set the term of 2018).

Networks, in particular for the energy transportation from the North where it is generated to the South where it is highly needed, must be expanded. To reach the goal, development of networks shall be accelerated considerably.

Buildings consume up to 40 percent of all energy and emit a third of CO2. Here the Government also sees a vast range of opportunities for saving. By 2050 buildings must make nearly no impact on the environment.

The Government has confirmed once again that by 2020 there must be up to 1 million of electricity-powered cars in the streets, and by 2030 the number must reach 5 million of them. Special rules shall be applicable to such vehicles, e.g., permits to drive in the bus lane or free parking in the city centre; moreover, the demand for electric cars must be promoted.