Translation of letter

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To: Directorate-General for Energy
European Commission

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Subject: **ENQUIRY NO 5042/13/ENER FROM THE EUROPEAN COMMISSION'S DIRECTORATE-GENERAL FOR ENERGY**

In reply to your letter No 5042/13/ENER of 3 May 2013, please find below additional information on the forecast consumption of primary and final energy in 2020.

On the basis of preliminary data from scientific research, energy needs for 2020 were forecast by assessing the actual primary and final energy needs in 2011 and taking into account the following key factors that will affect energy consumption in the future:

- GDP growth and the resulting increase in energy consumption (in individual sectors);
- changes in the size of the population and the resulting changes in energy consumption (in individual sectors).

GDP growth was evaluated on the assumption that GDP will grow by an average of 3% each year up to 2020. Thus, Lithuania's GDP in 2020 will be 133% of its 2011 level. Population trends were evaluated on the assumption that the population of Lithuania in 2020 will be 93% of its 2011 level. In Lithuania, GDP per capita will therefore be 43% higher in 2020 than in 2011.

An assessment was also carried out of the extent to which final energy needs in different sectors of the economy depend on GDP growth and population changes (see Table 1). Separate assessments were carried out of how electricity needs in different sectors increase or decrease with GDP growth or population changes and how heat and final fuel consumption changes.

Table 1. Extent to which final energy needs in different sectors of the economy depend on GDP growth and population changes

	For a 1% increase in GDP	For a 1% drop in population
Electricity		
Industry, construction and agriculture	+1%	-0%
Service sector	+0.5%	-0.2%
Transport	+0.3%	-0.2%
Households	+0.1%	-0.5%

Fuel and heat		
Industry, construction and agriculture	+0.5%	-0%
Service sector	+0.2%	-0.2%
Transport	+0.3%	-0.2%
Households	0%	-0.5%

On the basis of the above assumptions and in the light of actual final energy consumption in 2011 (4 696 ktoe), the total future final energy needs were estimated for individual sectors of the Lithuanian economy and for Lithuania as a whole. This gives the forecast total final energy needs without taking energy-saving measures into account.

Total energy needs, without taking energy-saving measures (increases in energy efficiency) into account, are expected to be 5 018 ktoe in 2020.

The potential impact of energy-saving measures on energy consumption was evaluated by assessing the maximum possible savings resulting from individual energy-efficiency measures in different sectors with regard to different forms of energy.

Table 2. Impact of energy-saving measures up to 2020

Energy-saving measures	Impact up to 2020
Electricity-saving measures	-12.7% (of electricity)
Introduction of more efficient vehicles, development of public transport, development of road infrastructure	-8.6% (of fuel in the road transport sector)
Renovation of 30% of the most inefficient buildings (building envelope insulation and heating automation)	-15.0% (of the costs of heat and fuel consumed directly in households and the service sector)
Replacement of fuel-burning equipment with more efficient equipment in households and the service sector	-7.6% (of fuel costs in households and the service sector)
Other measures to reduce heat and fuel consumption in the industrial, construction, agricultural and fishing sectors	-12.7% (of the costs of heat and fuel consumed directly in the industrial, construction, agricultural and fishing sectors)
Modal shift from road transport to rail (50% increase in rail transport)	-1.7% (of fuel in the transport sector)
Road transport electrification (5% of road transport)	-65 ktoe (of fuel used in road transport) +19 ktoe (of electricity) = -46 ktoe (of final energy)
TOTAL:	-14.7% or -740 ktoe (of final energy)

When evaluating the impact of transport electrification on final energy consumption, it was estimated that replacing vehicles powered by internal combustion engines with vehicles

powered by electric engines will increase electricity consumption by 0.3 toe for every 1 toe reduction in fuel consumption. The development of electric vehicles is therefore also considered to be an energy-efficiency measure.

Full implementation of the above-mentioned energy-saving measures would permit final energy savings of 740 ktoe by 2020.

In that case, with the implementation of energy-saving measures, the forecast for absolute final energy consumption in 2020 would be 4 278 ktoe, and the forecast for absolute primary energy consumption would be 6 485 ktoe.

[Signed]