

EVALUATION OF THE EFFECTS, BENEFITS AND COSTS FOR LITHUANIA BY IMPLEMENTING THE EU CLIMATE AND ENERGY POLICY TARGETS TILL 2030

EXECUTIVE SUMMARY

The principal objectives of the elaborated study encompass the following:

- > Identification of the effects to likely arise from implementation of climate change policy targets in the sectors of Lithuania's economy covered and not covered by emissions trading system (hereinafter – ETS);
- > Determination of potential for reducing greenhouse gas emissions (hereinafter – GHG) in the Lithuanian economy sectors not falling under ETS, and presumable GHG emissions, renewable energy sources (hereinafter – RES) and energy efficiency (hereinafter – EE) targets for the period of 2021 – 2030;
- > Comparison of effectiveness of the measures to be undertaken to achieve the potential national targets pertaining to GHG emissions, RES and EE;
- > Recommendations on the development of long-term policy for reducing GHG emissions in Lithuania and proposals for Lithuania's position in regard to the enforcement of the relevant targets in the EU legal acts.

The exhaustive analysis of ETS and non-ETS sectors revealed the most probable **quantity of GHG emissions for non-ETS sectors to amount to 13 126 334 tCO₂e in the year 2030.**

Identification of the GHG emissions reduction scenario to include the measures for both ETS and non-ETS sectors and to be the most attractive for Lithuania has lead to the following:

- **For electricity** production sector the total installed capacity of wind power plants in 2030 would make 1000 MW with another 350 MW to be derived from biomass cogeneration plants. Total investments are planned for 890 million EUR. Total GHG emissions in electricity production sector in 2030 would be **116 644tCO₂e.**
- **For heat production** (DH) sector 80 percent of heat energy would be generated from RES and municipal waste incineration. An overall need for bio-fuel boilers to be installed after 2020 would make 106 MW. Total investment sum is anticipated for 37 million EUR. Total GHG emissions in heat production (DH) sector in 2030 would be **526 084tCO₂e.**
- **In transport sector** the main measures projected include the development of ecological driving skills and habits, and renewal of the available vehicle fleet. Introduction of both measures in the transport sector would result in more efficient fuel consumption. Total investments are planned for 760 million EUR. Total GHG emissions in transport sector in 2030 would be **4 865 029tCO₂e.**
- **In industrial** sector it is foreseen that the final energy consumption in 2030 would make 910 ktne (in 2005 it was 942.5 ktne or was by 4 percent higher than expected in 2030), and an overall use of RES would amount to 15 percent. Total investments are planned for 750 million EUR. Total GHG emissions in industrial sector (excluding GHG emissions by industrial processes) in 2030 would be **1 056 252tCO₂e.**

- **In services** sector it is projected that the final energy consumption in 2030 would be 630 ktne (in 2005 it was 569.3 ktne or was by 10 percent lower than planned for 2030), and a share of RES would make 10 percent. Total investments are planned for 630 million EUR. Total GHG emissions in services sector in 2030 would be **394 283tCO₂e**.
- **In household** sector the final energy consumption for 2030 is anticipated to amount to 910 ktne (in 2005 it was 1386.3 ktne or was by 52 percent higher than expected in 2030), and a share of RES would make 39 percent. Total investments are planned for 4 180 million EUR. Total GHG emissions in household sector in 2030 would be **268 373tCO₂e**.
- **In agricultural** sector the implementation of numerous GHG emissions reduction measures is foreseen (in agronomy, cattle rearing, and biogas collection, and agrarian environment protection). Total investments are planned for 132 million EUR. Total GHG emissions in agricultural sector in 2030 would be **4 395 300tCO₂e**.
- **For other sectors** no additional measures to reduce GHG emissions are planned.
- The total scenario investments to be financed for the purpose of implementation of the 2021–2030 scenario would amount to **7 569 million EUR**, and the total quantity of the reduced GHG emissions would be **1 382 700tCO₂e**.

The year 2030 targets for reducing GHG emissions for non-ETS sectors have been formulated in the course of the study via comparison with the year 2005, where the quantity of GHG emissions had to be reduced by **8 percent, 10 percent or 12 percent** respectively. Upon evaluation of GHG emissions reduction costs and potential for non-ETS sectors, Lithuania was proposed to adopt an **optimal 10 percent GHG emissions reduction** target for non-ETS sectors until 2030. All non-ETS sectors will have to duly contribute for the purpose of achieving the GHG emissions targets. Moreover, the most GHG emission reduction-efficient sectors have been identified, viz., **transport** and **agricultural sectors**. Ecodriving is considered the most effective measure for GHG emissions reduction in transport sector with the effectiveness of the reduced GHG emissions totalling in 9.2 EUR/tCO₂/year. The most effective measure for GHG emissions reduction in agriculture would be the construction of biogas plants with the effectiveness of the reduced GHG emissions totalling in nearly 59.6 EUR/tCO₂/year.

Implementation of the proposed scenario would also lead to reaching an advantageous effect from the social standpoint, which would be reflected in the creation of new jobs and improvement of life quality. Reduction of a share of fossil fuel in the import balance would enable extra savings thus making the investments into the proposed scenario more attractive and also achieving an optimal level of GHG emissions reduction.