LITHUANIAN ENERGY INSTITUTE

ADMISSION TO PHD STUDIES FOR THE YEAR 2022

DOCTORAL RESEARCH TOPIC:

Research on economic development in the context of climate change

RESEARCH FIELD:

Economics (S 004)

BRIEF DESCRIPTION OF RESEARCH TOPIC:

Climate change, its effects and mitigation are at the center of attention not only for global scientists but also for decision-makers. The European Green Deal and similar initiatives in other countries, which mark a major transformation in energy and other sectors of the economy, are also targeting climate change mitigation. Achieving the set goals of climate change mitigation requires the use of various technical, economic, organizational and other measures to replace fossil fuels with renewable energy sources, increase energy efficiency, while assessing the limited natural, material, financial and labor resources in the long run. The complex search for rational solutions covers various branches of the economy (energy, transport, industry, agriculture, forestry, etc.), their mutual integration, long-term development is assessed, and mathematical modeling methods are most often used for analysis.

Reducing energy demand is one of the priority directions of energy development. It is essential for mitigating climate change, ensuring a sustainable and clean environment, increasing competitiveness and reducing energy poverty. Improving energy efficiency is a key tool for reducing energy demand, but more ambitious national climate change mitigation strategies are needed to implement the Paris Agreement on Climate Change, taking into account not only energy efficiency but also the integration of energy sufficiency policies. Quantitative and qualitative assessment of energy sufficiency is essential to assess the long-term role of sufficiency in climate change mitigation.

The applicability of climate change mitigation measures must be assessed not only in terms of environmental efficiency, but also in terms of sustainability aspects such as the impact on the country's economy or the distribution of income among groups in society, etc. Climate change mitigation is strongly influenced by factors related to human behavior. Behavioral barriers have no less impact than economic or technological barriers. Therefore, measures to reduce behavioral barriers also have significant potential for climate change mitigation, especially if synergies with traditional climate change mitigation measures are achieved. On the other hand, it is important to study and evaluate the impact of policy changes initiated institutionally ("top-down") from the point of view of the welfare society, taking into account the diversity, multifacetedness and dynamics of the content of the welfare society concept. Behavioral economics insights can help to understand and shape the direction, scale, and dynamics of the impact of energy policy change, taking into account and explaining how individuals and society as a whole view different policy change initiatives, make decisions, and change or not change their behavior.

The impact of the global economic transformation on reducing carbon emissions and mitigating climate change is very different for each group in society. It is therefore vital to ensure that the transition to a climate-neutral economy is socially just and does not leave the most vulnerable part of the society on the

sidelines of the process. Assessing the impact of climate policy measures would make it possible to identify the most beneficial or disadvantaged groups and to select measures that better reflect the aspirations for the sustainable and harmonious development of society and increase social welfare.

For the purpose of the climate change mitigation, investment in the EU's economy, its recovery and growth after the COVID-19 crisis is of strategic importance, as it ensure the establishment and development of sustainable, innovative and high value-added economic activities and businesses in the countries. It is necessary to find solutions that enable the region's industries to participate not only in domestic but also in international value chains, focusing on the search for and implementation of climate change mitigation solutions and thus contribute to job creation, green energy production, phase out of fossil fuels, improvement of energy efficiency or energy sufficiency. In this context, it is necessary to ensure the production of products and their components, the use of which would contribute to climate change mitigation, in Europe itself, and at the same time in Lithuania. Such industrial economic activities should be based on the principles of the functioning of the circular economy, as well as on various forms of scientific and industrial cooperation. Therefore, research focusing on the identification of opportunities and prospects for the participation of industry in the value chains of products and their components used for climate change mitigation is relevant and timely.

The aim of the research is to provide scientific knowledge through climate change mitigation research that can help reduce the costs of climate change mitigation and enable the effective implementation of climate change mitigation measures. (The goal for individual doctoral students will be specified, taking into account the doctoral student's education and inclinations. Based on this, a scientific supervisor will be selected from the list of the research team.)

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