

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF ENERGY OF THE REPUBLIC OF LITHUANIA
CONCERNING COLLABORATION IN SUPPORT OF LITHUANIA'S
ENERGY SECURITY AND ITS PATHWAY TO A CLIMATE-NEUTRAL
ENERGY SECTOR BY 2050

7th of July 2022 No. 8-54

The Department of Energy of the United States of America (DOE) and the Ministry of Energy of the Republic of Lithuania (MOE), hereinafter referred to as the "Participants",

Recognizing the significance of a strong transatlantic bond, close coordination, and cooperation in dealing with geopolitical regional energy security challenges:

Highlighting the importance of already established formats for transatlantic energy cooperation, such as the Partnership for Transatlantic Energy and Climate Cooperation and the U.S. - Baltic High-level Dialogue on Energy, in supporting continuous and smooth exchange of information and ideas among the transatlantic partners on the key energy security issues across the Atlantic and leading to practical cooperation;

Reconfirming their commitment to working together through the Partnership for Transatlantic Energy and Climate Cooperation and the U.S. - Baltic High-level Dialogue on Energy to make the most of opportunities offered by the transatlantic partnership in the field of energy and climate change;

Recognizing the ongoing successful bilateral cooperation in the field of energy based on shared values and aspirations and a potential for this cooperation to be even more intensified;

Acknowledging the importance of U.S. political and technical support for the implementation of strategic energy security projects in Lithuania, as well as for the overarching goal of achieving a climate-neutral energy sector by 2050; and

Considering that bilateral and multilateral cooperation has proved to be mutually beneficial by bringing added value in achieving energy security and climate change goals and should continue to be mutually beneficial by creating incentives for investment in clean energy technologies, scientific exchanges, and other advantages,

Have reached the following understanding:

Section 1: Cooperative Activities

1.a. The Participants intend to expand their existing cooperation under this Memorandum of Understanding (MOU), in areas including but not limited to, strengthening of cyber security in Lithuania's energy sector and its transition to climate neutrality by 2050.

1.b. Cooperative projects in these areas are expected to be implemented by DOE's National Laboratories and Lithuanian national authorities under the supervision of DOE and MOE, respectively.

1.c. Descriptions of each planned cooperative project under this MOU are included in Annex 1 to this MOU. Detailed provisions for implementation of each project are expected to be established in separate Statements of Work or other written arrangements between the Participants or their participating institutions, as appropriate.

Section 2: Management

2.a. To manage cooperation under this MOU, each Participant intends to designate a Program Coordinator. Each Program Coordinator may appoint technical coordinators to manage specific cooperative activities under this MOU. To oversee implementation activities and assess the mutual benefits of this MOU, Program Coordinators may meet at such times and places or through such other modalities as they jointly determine.

2.b. The Program Coordinators for activities under this MOU are:

<i>For DOE:</i> Assistant Secretary for International Affairs, U.S. Department of Energy	<i>For MOE:</i> Vice-Minister of Energy, Lithuanian Ministry of Energy
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2.c. The Participants may add additional mutually accepted planned cooperative projects under this MOU, or remove or edit currently listed projects, at any time by modification of the Annex as may be decided in writing by the Program Coordinators.

SECTION 3: GENERAL CONSIDERATIONS

3.a. The conduct of cooperative activities under this MOU is subject to the availability of funds.

3.b. Unless otherwise decided in writing by the Participants, each Participant intends to be responsible for its own costs in conducting cooperative activities under this MOU.

3.c. Each Participant intends to conduct cooperative activities under this MOU in accordance with applicable laws, regulations, and policies to which it is subject.

3.d. This MOU does not create any legally binding obligations between the Participants.

SECTION 4: COMMENCEMENT, MODIFICATION, AND DISCONTINUATION

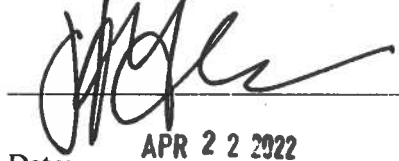
4.a. Cooperative activities under this MOU may commence upon signature of both Participants and continue for a period of five (5) years.

4.b. The Participants may extend cooperation under this MOU for additional periods or modify this MOU upon mutual written consent.

4.c. The Participants may discontinue participation in this MOU at any time as may be decided in writing. Alternatively, either Participant may discontinue its participation in this MOU at any time but should endeavour to provide at least 90 days advance written notice to the other Participant.

Signed in duplicate in the English language.

FOR THE DEPARTMENT OF
ENERGY OF THE UNITED
STATES OF AMERICA:



Date: APR 22 2022

Place: _____

FOR THE MINISTRY OF
ENERGY OF THE REPUBLIC
OF LITHUANIA:



Date: 07-07-2022

Place: _____

Annex 1: Planned Cooperation

This Annex provides a description of the cooperative efforts envisioned under this MOU. This Annex may be modified to add, remove, or change descriptions of cooperative efforts at any time as may be decided in writing by the Participants' Program Coordinators.

1. "The Lithuania 100% Renewable Energy Study," hereinafter referred to as "Lithuania 100":
 - Lithuania aims to achieve self-sufficiency and to become a net exporter of renewable energy as well as to ensure its energy sector pathway to carbon neutrality by 2050.
 - The purpose of "Lithuania 100" is to conduct a study that assesses pathways to carbon neutrality for Lithuania's energy sector along with its goals to achieve self-sufficiency and to become a net exporter of renewable energy.
 - "Lithuania 100" is expected to be conducted by the National Renewable Energy Laboratory, hereinafter referred to as "NREL", in coordination with the Lithuanian Energy Agency. NREL and the Lithuanian Energy Agency may also coordinate with other U.S. National Laboratories, Lithuania's national authorities, and stakeholders in the energy sector.
 - "Lithuania 100" is expected to include a set of modelling tools, data, and results that can answer high-level questions about the technology options, investments, and implementation measures for achieving full self-sufficiency and carbon neutrality for Lithuania's energy sector while maintaining energy security, reliability, and cost-effectiveness.
2. "Cyber-Competency Health and Maturity Progression Model for Lithuania's Energy Sector", hereinafter referred to as the "Cyber-CHAMP Model for Lithuania's Energy Sector":
 - Lithuania aims to advance cyber security in its energy sector by strengthening the competencies of energy sector personnel and their readiness to ensure sufficient protection of the strategic energy infrastructure in Lithuania against cyber threats.
 - The purpose of this project is to develop the "Cyber-CHAMP Model for Lithuania's Energy Sector," which would assess organizational cyber security readiness of Lithuania's energy sector and provide measurable increases in cyber health by continuously optimizing competency.
 - The "Cyber-CHAMP Model for Lithuania's Energy Sector" is expected to be developed by the Idaho National Laboratory in coordination with Lithuania's electricity and gas transmission system operators, Litgrid and Ambergrid; electricity and gas distribution system operators, Ignitis Group DSO; as well as with oil and liquefied natural gas terminal operator, Klaipėdos nafta.
 - The "Cyber-CHAMP Model for Lithuania's Energy Sector" is expected to include the following modules: organizational security readiness, organizational analysis, technical competency analysis, and management competency analysis.
3. "Climate Vulnerability Assessment of the Lithuanian Energy System".
 - Lithuania aims to increase the resilience of energy infrastructure against climate-induced threats. While energy system reliability is being

constantly upgraded, energy infrastructure still requires constant maintenance. This is particularly the case in the electricity sector.

- The purpose of this project is to develop a model which would evaluate the ways in which climate impacts Lithuanian power system performance and would analyse adaptation or mitigation options.
- The “Climate Vulnerability Assessment of the Lithuanian Energy System” is expected to be performed by the Argonne National Laboratory (ANL) in coordination with Lithuanian electricity and gas transmission system operators.
- The “Climate Vulnerability Assessment of the Lithuanian Energy System” is expected to include: data collection and analysis to understand projections of future climate conditions and frequency of weather extremes in different geographical regions of the country; data collection and processing to apply ANL’s EPClimate model to evaluate impacts of climate change on power system performance and grid resilience; and a training workshop on Climate Risk Informed Decision Making.