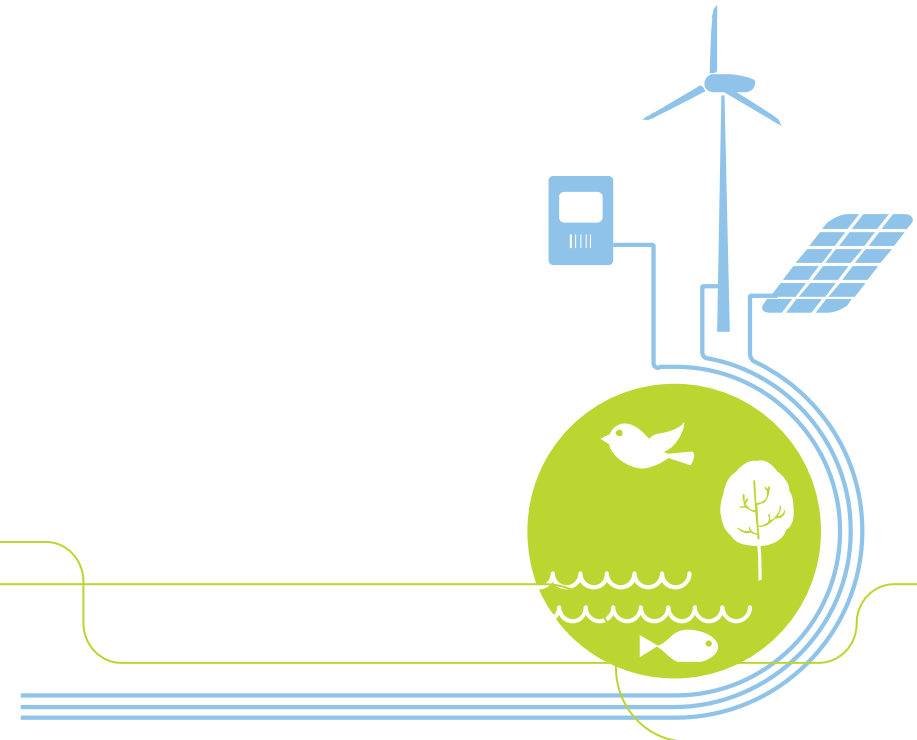


The Regulatory Landscape Governing CCS/CCUS Deployment in Lithuania

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04-10-2024
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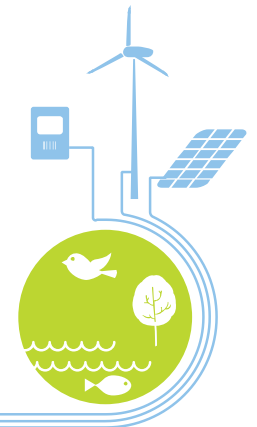


THE REGULATORY LANDSCAPE GOVERNING CCS/CCUS DEPLOYMENT IN LITHUANIA

- **EU CCS Directive (2009/31/EC):**
 - Governs geological storage of CO₂
 - Defines requirements for **CO₂ capture, transport, and storage**
- **EU Emissions Trading System (ETS):**
 - Financial incentives for industries to reduce emissions or invest in CCS
- **Carbon Border Adjustment Mechanism (CBAM):**
 - Encourages CCS adoption by imposing carbon tariffs on high-emission imports
- **Net Zero for Industry Act**
 - Aims to enhance European manufacturing capacity for net-zero technologies and their key components, addressing barriers to scaling up production in Europe
- **Industrial carbon management strategy (COM/2024/62):**
 - identifies a set of actions to be taken, at EU and national level, to establish a single market for CO₂ in Europe and to create a more attractive environment for investments in industrial carbon management technologies

National Legislation and Strategy:

- **Lithuanian National Energy and Climate Plan (NECP) 2021-2030:** outlines Lithuania's roadmap for reducing emissions and transforming its energy sector. CCS/CCUS is highlighted as a crucial technology for achieving Lithuania's **2030 emissions reduction target of 70%** compared to 1990 levels, particularly for industries where emissions are hard to abate.
- **National Energy Independence Strategy:** long-term strategy emphasizes the importance of developing new energy technologies, including CCS/CCUS, to ensure energy security, reduce greenhouse gas emissions, and increase competitiveness.

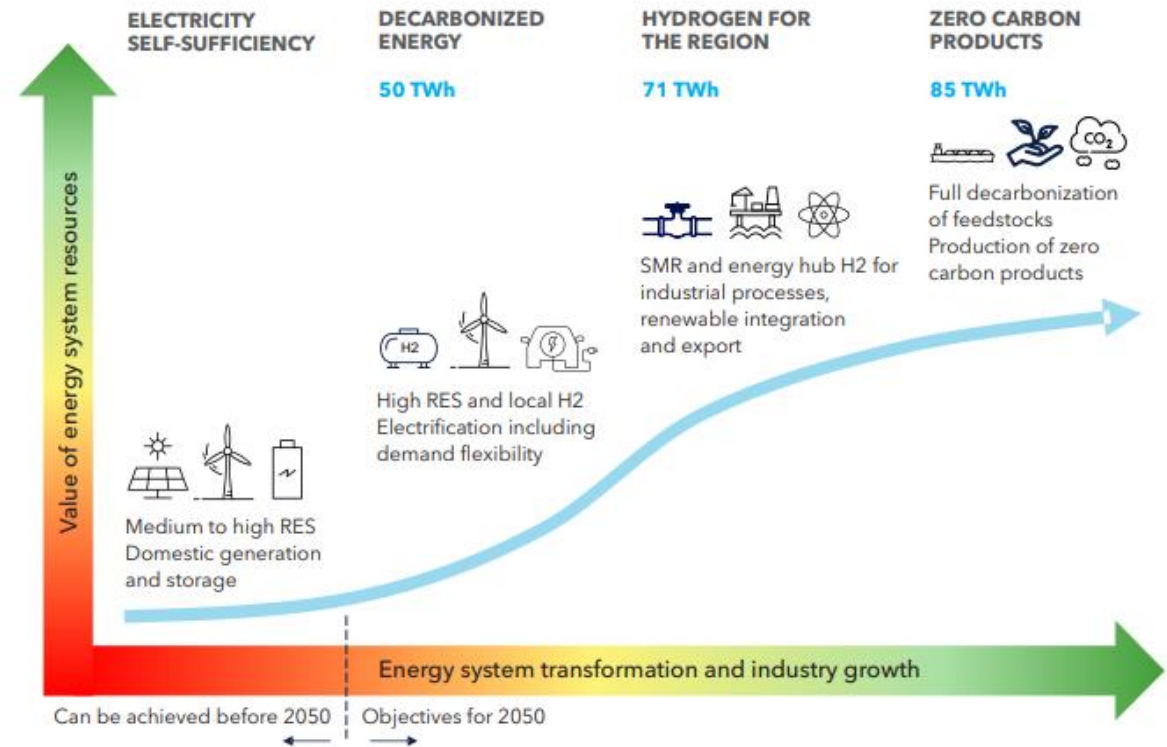


NATIONAL ENERGY INDEPENDENCE STRATEGY

4 main objectives:

- to ensure a secure and reliable supply of energy to all consumers,
- to achieve 100% climate-neutral energy for Lithuania and the region,
- to transition to an electricity economy and develop a high value-added energy industry, as well as
- to ensure the accessibility of energy resources for consumers.

- **CCS/CCUS is a critical tool for hard-to-abate sectors like heavy industry and power generation**



Lithuania Energy System transformation to 2050 ,
<https://www.epsog.lt/uploads/documents/files/Lietuvos%20energetikos%20vizija/DNV%20EPSOG%20Lithuania%20Energy%20System%20Transformation%20Strategy.pdf>

EXISTING POLICIES AND INCENTIVES PROMOTING CCS INNOVATION AND INVESTMENT

National Incentives:

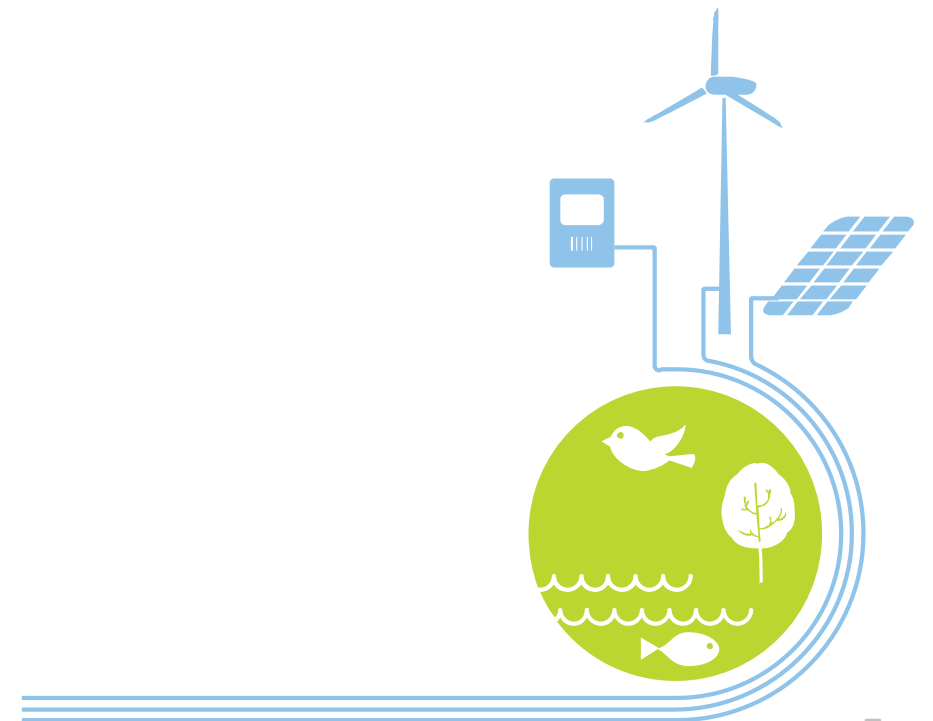
1. CETP program (Horizon Europe framework)
2. RES R&D projects financed by the Ministry of Energy
3. Market based investments, pilot projects
4. Energy Technology Development Centre

SECTOR/INVESTMENTS	FUNDING OPTIONS
Renewable energy deployment	European Regional Development Fund, Cohesion Fund, Just Transition Fund, InvestEU, and Modernisation Fund, <i>Recovery and Resilience Facility</i> ³⁷
Hydrogen	LIFE Clean Energy Transition and Climate Change Mitigation and Adaptation, Horizon Europe, Modernisation Fund
Interconnections with neighbouring countries	Connecting Europe Facility Energy, Transport and Digital, EU Renewable Energy Financing Mechanism
Transport electrification and decarbonization	European Regional Development Fund, Cohesion Fund, Just Transition Fund
SMRs	Euratom Work Programme 2023-2025
Education, training, up- and reskilling	European Social Fund Plus, Just Transition Fund, <i>Recovery and Resilience Facility</i>
All energy sector investments	European Investment Bank

Lithuania Energy System transformation to 2050 , 2024,
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Key Opportunities for Policy Reform:

- ✓ Strengthening National CCS Regulations
- ✓ Expanding Financial Incentives
- ✓ Incorporating CCS into Lithuania's Energy Strategy
- ✓ Collaborating with Regional Partners



FUTURE LEGISLATIVE PROPOSALS

- **Strengthening National CCS Framework:**
 - Establish clear legal and regulatory pathways for CCS deployment
 - Define long-term liability frameworks for CO₂ storage
- **CCS Roadmap:**
 - Develop a national CCS roadmap to provide industry guidance and targets

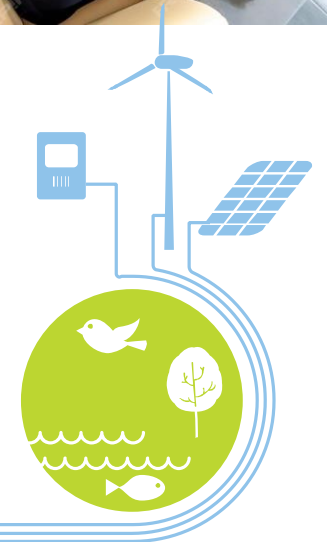


CCS/CCUS PLATFORM

- In October 2024, Lithuania is set to launch a **Carbon Capture, Utilization, and Storage (CCS) Platform** aimed at fostering collaboration across key sectors in the development and deployment of **CCS technologies**.
- This initiative is a result of a multi-stakeholder agreement that includes participation from ministries, industry leaders, and academic institutions



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PURPOSE AND GOALS OF THE CCS PLATFORM

- **The main objective:**

- to create a collaborative environment where stakeholders from industry, academia, and government can work together to develop, implement, and promote CO₂ capture, transport, storage, and utilization technologies in Lithuania.

- **Key Goals:**

- Facilitate Technological Development
 - Boost Economic Growth
 - Support National Climate Goals
 - Develop a national framework for CO₂ transport infrastructure, storage solutions, and utilization in industries such as construction, energy, and transport



STRATEGIC FOCUS AREAS

1. CO₂ Capture and Transport Technologies:

- Develop and implement CO₂ capture technologies at industrial facilities.
- Build a **CO₂ transportation network** within Lithuania, with potential expansion to the **Baltic region** for cross-border storage and use.

2. CO₂ Storage Solutions:

- Investigate and develop **geological storage** sites for long-term CO₂ storage, potentially leveraging onshore storage options.
- Align with EU regulations on **CO₂ storage safety** and **monitoring standards**.

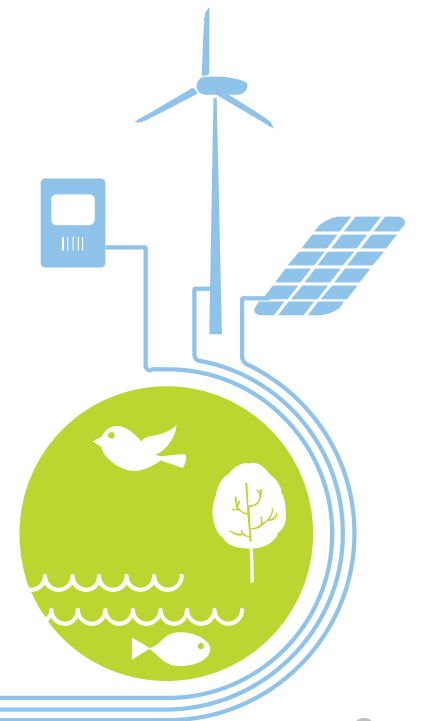
3. CO₂ Utilization:

- Focus on the **conversion of captured CO₂** into **synthetic products**, such as **methanol, ammonia, or synthetic methane** for use in the **energy** and **transport** sectors.
- Encourage the development of markets for **green products** made from captured CO₂.

4. R&D and Innovation:

- Promote **research and development** into next-generation carbon capture technologies and **innovative CO₂ utilization methods**.

Support Lithuanian universities and research institutes in developing and testing new CCS applications



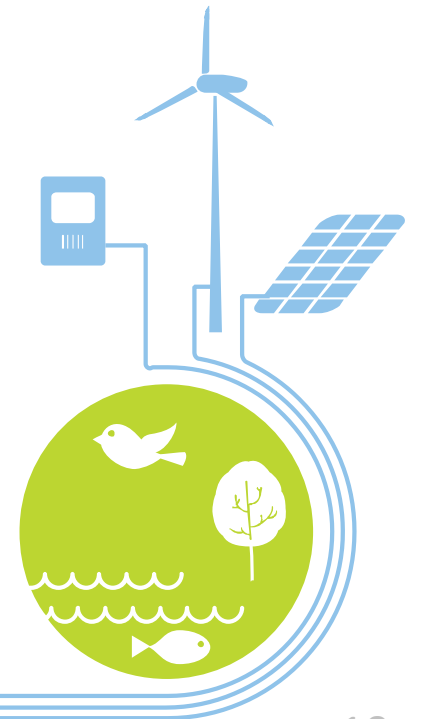
Specific areas of focus include:

- **Shaping National and Regional CCS Policy:**

- The platform will contribute to the formation of a national regulatory framework for CCS and propose new laws to incentivize the growth of CCS infrastructure.
- Develop recommendations for aligning Lithuania's CCS strategy with EU CCS legislation.

- **Incentives for Industry:**

- Propose financial instruments and grants to reduce the cost of implementing CCS technologies for industries.
- Utilize EU financial instruments, such as the Innovation Fund, to fund large-scale CCS projects in Lithuania



MEMBERS AND STAKEHOLDERS INVOLVED

- **Lithuanian Ministries:**

- Ministry of Energy (lead coordinator)
- Ministry of Environment
- Ministry of Economy and Innovation

- **Industry Leaders:**

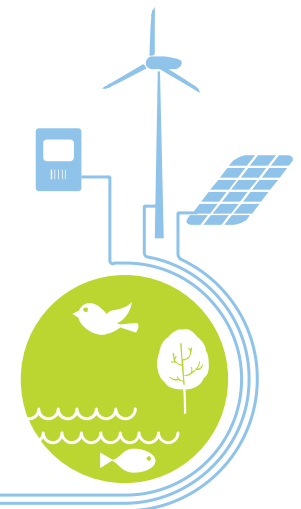
- **AB "AmberGrid":** the operator of the Lithuanian natural gas transmission system, responsible for the transmission of natural gas to consumers and the operation, maintenance, and development of infrastructure.
- **AB "Ignitis Grupė":** Lithuania's largest energy company, responsible for significant portions of the country's electricity and gas supply.
- **AB "Achema":** a major player in the fertilizer industry and a potential candidate for CCS integration.
- **AB "KN Energies":** the international operator of energy terminals, operator of LNG terminal and future operator of CO2 infrastructure

- **Academic Institutions:**

- Vilnius Gediminas Technical University (VGTU)
- Kaunas University of Technology (KTU)
- Klaipeda University (KU)
- Lithuanian Energy Institute (LEI)

- **Collective institutions:**

- Lithuanian Confederation of Industrialist's



OPPORTUNITIES FOR COLLABORATION AND FUTURE DEVELOPMENT

Future Opportunities:

✓ **Regional Collaboration:**

- ✓ Lithuania could collaborate with neighbouring countries to create a shared CO₂ transport and storage infrastructure

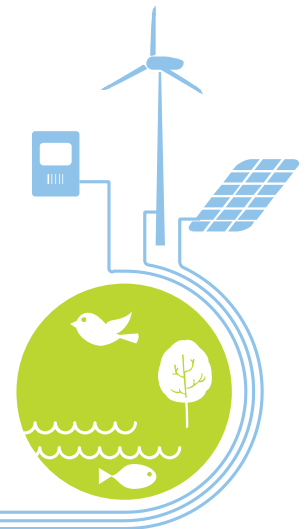
✓ **EU-Wide Initiatives:**

- ✓ The platform will enable Lithuania to actively participate in EU initiatives and funding programs related to CCS/CCUS technologies

✓ **Expanding CCS R&D:**

- ✓ Collaboration with leading research institutions across Europe will drive innovation in CCS and related technologies

- ✓ **Disseminating** knowledge and raising the awareness of a society that seeks public awareness and perception

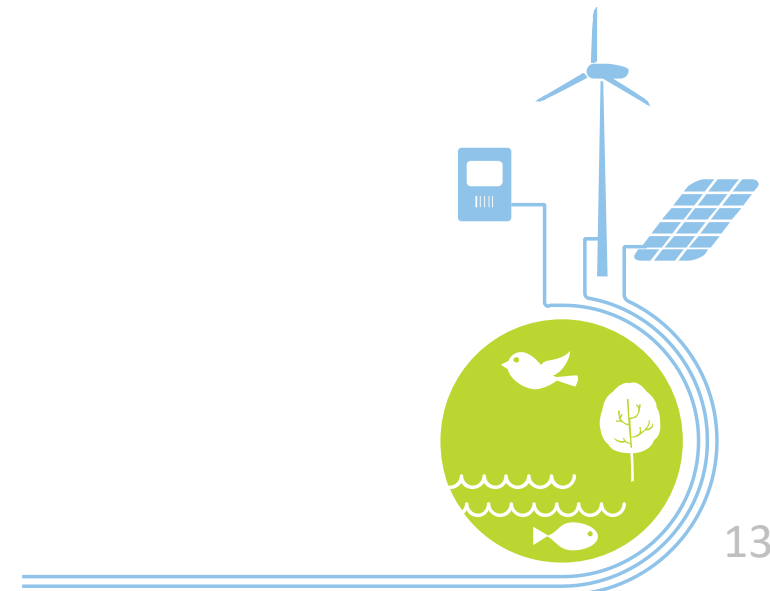


CONCLUSION: CREATING A SUPPORTIVE ENVIRONMENT FOR CCS DEVELOPMENT

To accelerate the deployment of CCS technologies and meet its **climate and energy security goals**, Lithuania needs to:

- Strengthen its **regulatory framework** for CCS.
- Expand financial incentives to reduce the costs of CCS adoption.
- Engage in **regional collaboration** for shared infrastructure and joint projects.
- Build **public and industry confidence** by promoting the benefits of CCS and fostering **multi-stakeholder cooperation**.

Through these reforms and collaborative efforts, Lithuania can establish itself as a leader in CCS innovation while securing its energy future and meeting its decarbonization commitments





Thank you for your attention