IOŚ-PIB

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KOBiZE

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This document was prepared in the Centre for Climate and Energy Analyses (CAKE) established in the National Centre for Emissions Management (KOBiZE), while KOBiZE is a part of the Institute of Environmental Protection - National Research Institute (IOŚ-PIB).

This document was prepared within the scope of the project: "The impact assessment of the EU Emission Trading System with the long-term vision for a climate neutral economy by 2050 (LIFE VIIEW 2050)" - LIFE19 GIC/PL/001205 – LIFE VIIEW 2050.

If you have any comments or questions regarding this document, please contact: cake@kobize.pl.

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1. LIFE VIIEW 2050 IN BRIEF

LIFE VIIEW 2050 -
Vision on Impact & Improvement of the EU ETS Working by 2050

- **LIFE19 – Governance and Information – Climate (GIC)**
- **Duration:** Start: **01/12/20** - End: **31/12/24**
- **Beneficiary: The Institute of Environmental Protection – National Research Institute** (IOŚ-PIB)
- **Budget:**
  - Total: EUR 1 339 240
  - EU contribution: 55%
  - NFOŚiGW co-financing: 40%
  - Own financing: 5%
- **Location:** Warsaw

2. PROJECT HISTORY

The main objective of LIFE VIIEW 2050 project has been to assess the functioning of the European Union Emissions Trading System (EU ETS), its impact and interaction with other EU climate policy measures, other international emissions trading systems and its evolution towards a climate neutral EU economy by 2050. The research we have conducted helps support and promote the functioning of the EU ETS and other policies that have an impact on carbon pricing, while the dissemination of the EU experience in this area contributes to the improvement of the climate and energy policy at the European and international level. Since the launch of the project on the 1st of December 2020, the analytical work in the LIFE VIIEW 2050 have employed macroeconomic and sectoral models, developed and being constantly improved by CAKE experts. Thanks to this advanced toolkit, it has been possible to carry out comprehensive analyses concerning the functioning and development of the EU ETS to enhance achieving the EU climate neutral economy by 2050.

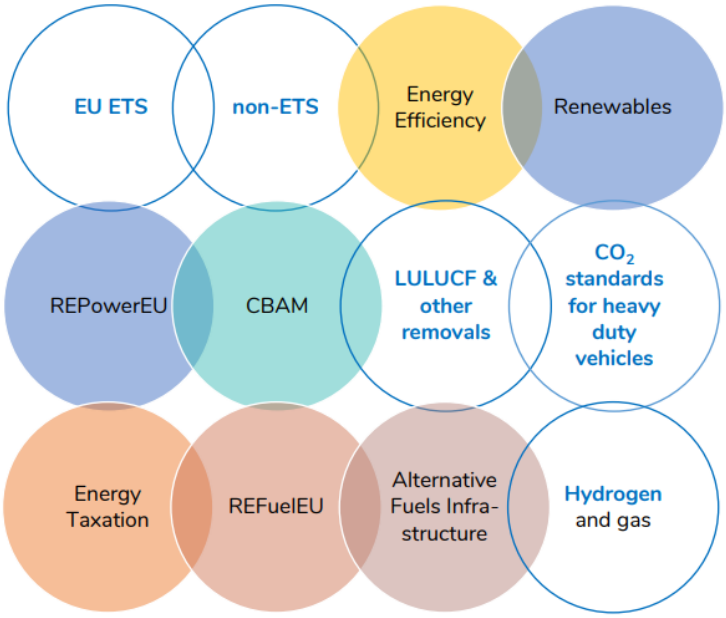
At the end of the project, the CAKE team has consisted of 21 people, including 14 modelling experts and 7 people - administration, promotion, financing and monitoring staff. During the whole duration of the LIFE VIIEW 2050, 26 current and former members of the CAKE team were

engaged in the project. Our team has consisted of permanent employees of IOŚ-PIB and KOBiZE, as well as experts and scientists from universities and research centres cooperating with us. The project implementation would not have been successful without the great commitment of all these people over the four years.

In November 2020, IOŚ-PIB and the European Commission signed an agreement (LIFE19 GIC/PL/001205 – LIFE VIIEW 2050) for the implementations of the LIFE VIIEW 2050 project. Then in March 2021, the agreement for additional financing agreement was signed between IOŚ-PIB and the National Fund for Environmental Protection and Water Management.

3. MAIN ACTIONS

The primary objective of the **LIFE VIIEW 2050** project has been to assess the effectiveness of the EU ETS, its impacts, and its interactions with other EU policy instruments, international systems, and potential future developments, all in the context of achieving a climate-neutral EU economy by 2050. A complementary aim has been to support and improve the functioning of the EU ETS and other carbon pricing policies, while sharing EU expertise to foster better-designed climate and energy policies both within the EU and internationally.

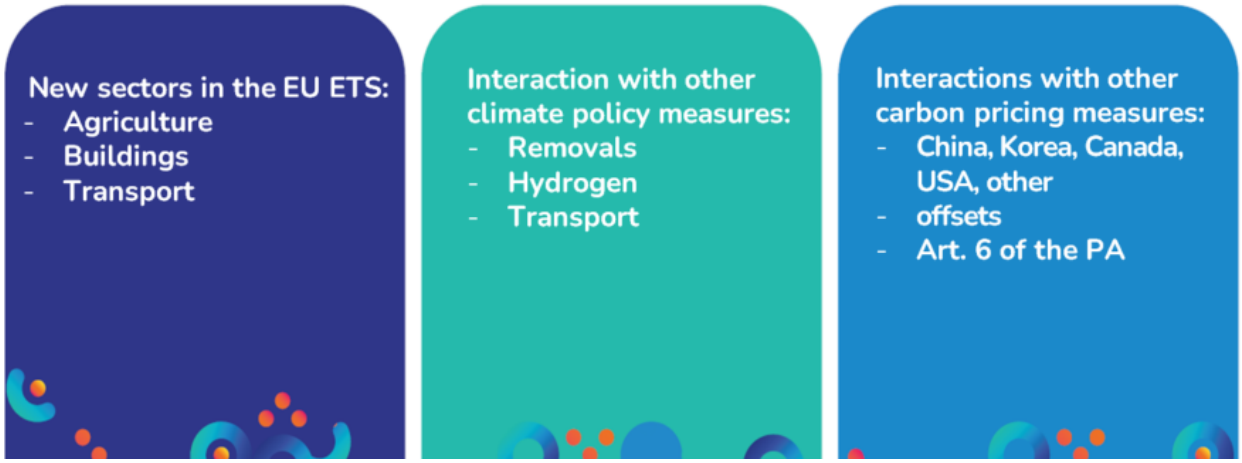


The project has been organised into three research Work Packages (WPs), each of which has been dedicated to analysing different aspects of the EU ETS and its interactions with:

WP1: other climate-energy policy instruments supporting deployment of low-carbon technologies and measures such as RES and EE,

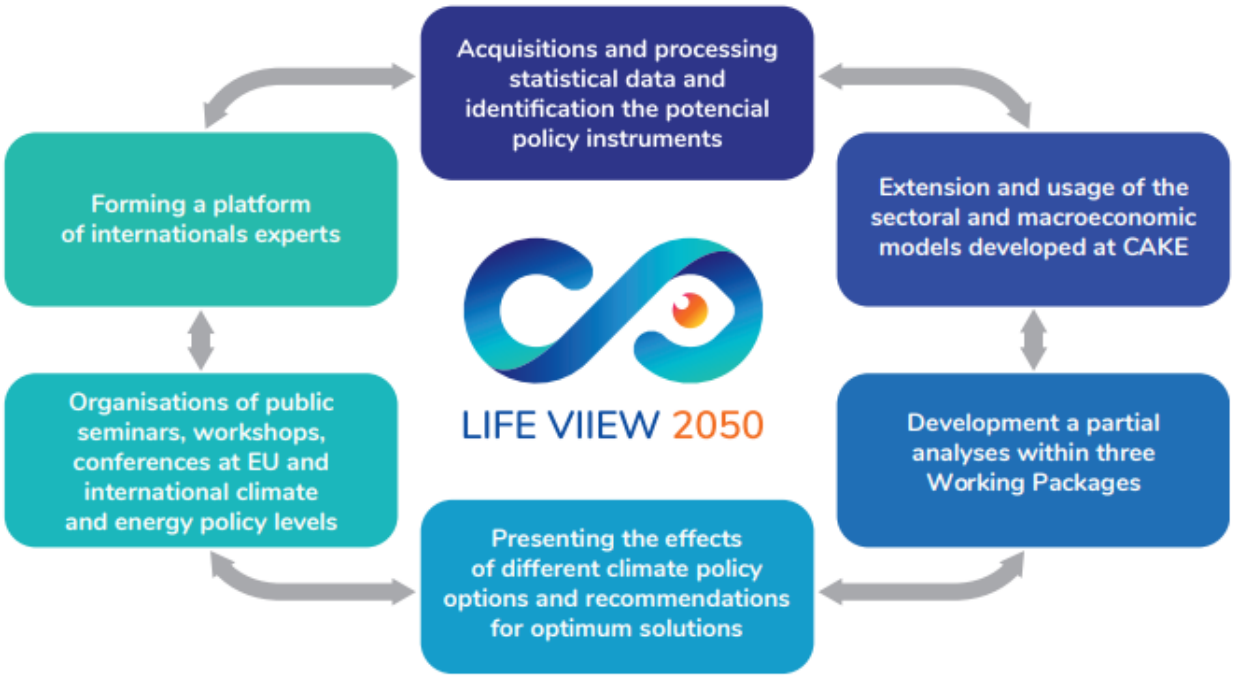
WP2: non-ETS sectors in the EU ETS,

WP3: other ETS systems and carbon market mechanisms worldwide.



Objectives of the project:

- Extend and apply the sectoral and macroeconomic models developed in the LIFE-Climate Cake PL project to identify and incorporate into the models current and future policies and mechanisms that may affect the operation of the EU ETS.
- Development of high quality and accessible information and data within the three work packages mentioned above, including advanced modelling using CGE, energy and transport models as well as the knowledge and experience of CAKE experts.
- To provide high quality, easily accessible information and data on the three work packages to the European Commission, European and international public administrations, policy makers, NGOs, private entities and the public.
- To build broader and stronger international networks of experts to disseminate high quality information and data on the evaluation of the EU ETS and to build international political support for the EU ETS and other carbon pricing mechanisms.
- To improve the environmental awareness of the public through wide dissemination of high quality information and data developed during the project implementation.



STAGE 1: ANALYTICAL TOOLS

The analytical work, which has been the main component of the LIFE VIIEW 2050 project, uses macroeconomic and sectoral models developed by CAKE experts. These models have been continuously improved, refined and updated by the team in order to reflect the changing economic, technological and social landscape. These advanced tools have allowed for comprehensive analyses of the functioning and future development of the EU ETS, with a view to a climate-neutral EU economy by 2050.

Analytical Toolkit:

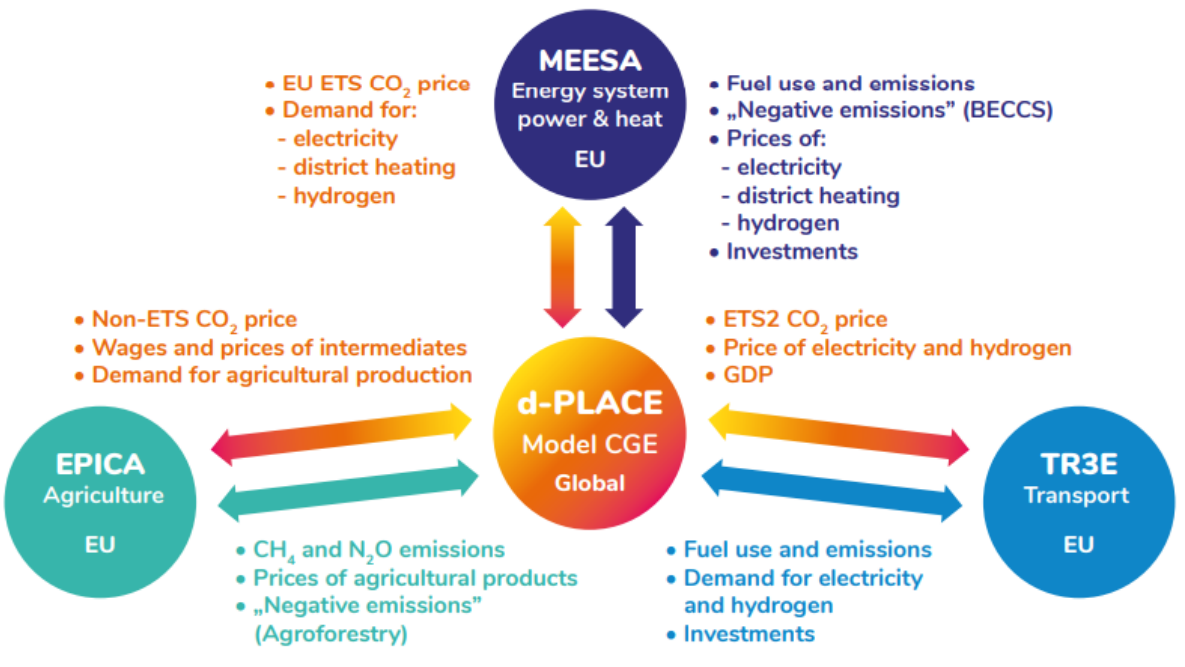
Model d-PLACE (CGE) – the global macroeconomic general equilibrium model (CGE) allows for an economy-wide, comprehensive assessment of the impacts of climate and energy policies.

Energy model MEESA (Model for European Energy System Analysis) – the model allows for detailed simulations of various transformation option of the energy sector in the EU.

Transport model TR3E (Transport European Economic Model) – the model allows for the analysis of various option to reduce CO_2 emissions in the transport sector by switching to carbon free models of transport.

Agriculture model EPICA (Evaluation of Policy Impacts – Climate and Agriculture) – the model enables analysing the impact of various climate policy measures on agriculture, including emissions, production volume and structure, and farmers' income in the European Union.

Graph 1. Diagram of integration of models created by CAKE for the LIFE VIIEW 2050



Source: CAKE/KOBiZE

STAGE 2: PREPARING ANALYSES

As part of the project, we have published 3 main analyses:

- „VIIEW on EU ETS 2050: Changing the scope of the EU ETS" (April 2023)
- „VIIEW on EU ETS 2050: Exploring synergies between the EU ETS and other EU climate policy measures – carbon removal, hydrogen, and sectoral transport policy" (April 2024)
- „VIIEW on EU ETS 2050: Linking EU ETS with other carbon pricing mechanisms" (November 2024)

There are also policy recommendations:

- „VIIEW on EU ETS 2050: Nowe sektory w EU ETS w kontekście neutralności klimatycznej UE w 2050 – Skutki dla Polski" (June 2023)
- „VIIEW on EU ETS 2050: Exploring synergies between the EU ETS and other EU climate policy measures – carbon removal, hydrogen, and sectoral transport policy" – Summary and Policy Recommendations (April 2024)

New sectors in EU ETS

Removals, hydrogen, transport

Linking EU ETS with other ETS and offsets

Key conclusion of the report „VIIEW on EU ETS 2050: Changing the scope of the EU ETS":

- **Regional variation in the impacts of the EU ETS extension:** The inclusion of the building and transport sectors in the EU ETS brings benefits at the EU level.
- **Carbon price differences between ETS systems**: ETS2 emission prices rise after the 2030s, favoring regions with allowance surpluses. Merging the systems worsens their position.
- **Impacts of including agriculture in the EU ETS:** Food prices rise, agricultural production drops, and exports decline, requiring compensatory policies and a reform of the EU's Common Agricultural Policy.

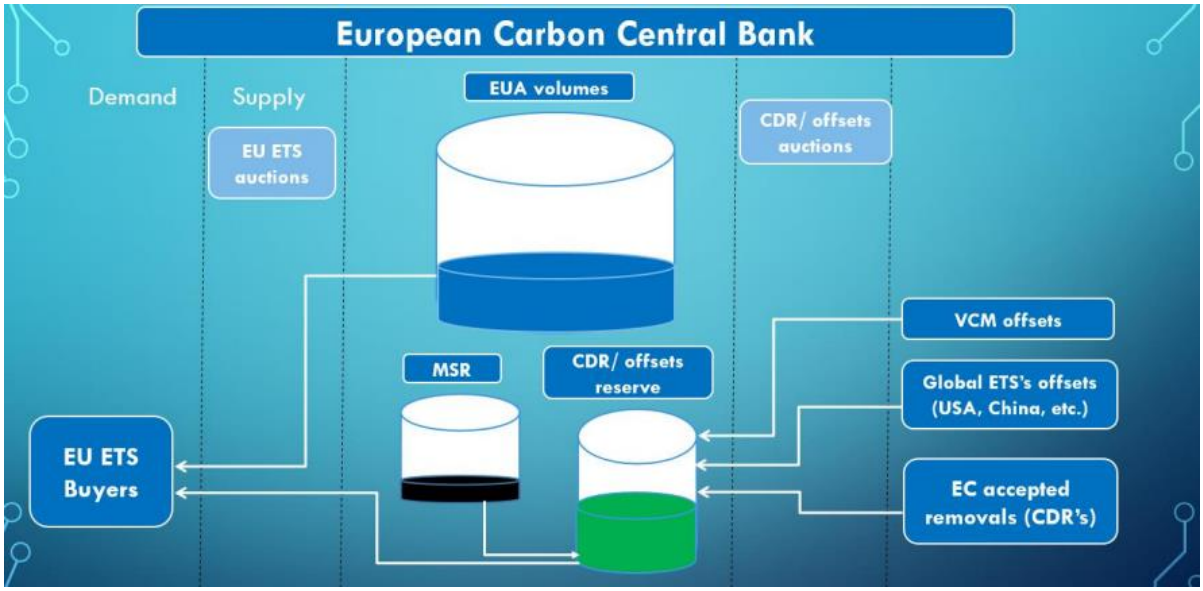
Key conclusion of the report „VIIEW on EU ETS 2050: Exploring synergies between the EU ETS and other EU climate policy measures – carbon removal, hydrogen, and sectoral transport policy":

- **The use of CDRs in the EU ETS increase the cap:** Allowing sectors with high abatement costs to purchase additional units instead of investing resources in costly decarbonisation options.
- **Significant reductions in carbon prices, GDP, and consumption growth after including the CDRs into the EU ETS:** Drop in the EU ETS price and at the macroeconomic level, increases EU consumption by 0.9% in 2040 and 1.9% in 2050. Positive impact on GDP (by 0.6% in 2040 and 2050). In Poland, consumption in 2040 is 1.1% higher and in 2050, the difference in consumption increases to 3.8%.

Key conclusion of the report „VIIEW on EU ETS 2050: Linking EU ETS with other carbon pricing mechanisms":

- **CBAM and ETS linking reduces incentives for companies to relocate to regions with lower climate standards:** These mechanisms can help countries meet their climate goals more efficiently while minimising cross-border competitive disadvantages. CBAM can incentivise EU trading partners to invest in low-emission technologies.
- **Linking ETSs across regions increases market liquidity, leading to more competitive carbon pricing, technology transfer and lower overall compliance costs:** The global welfare gain from ETS linking, approximated by increase in real household consumption, is estimated to range from around EUR 25 billion in 2035 to EUR 40 billion in 2050.
- **The use of offsets in the EU ETS could reduce compliance costs and address emissions from sectors with limited decarbonisation options:** The use of offsets in the EU ETS is associated with an increase in EU consumption of 0.15-0.20% of GDP (EUR 30-45 billion per year).
- **European Central Carbon Bank (ECCB) could manage supply in the carbon market, acting as a stabilising force to ensure the system's effectiveness**: By centralizing control over allowances, removals and offsets, the ECCB would promote a stable and reliable carbon market environment that supports the EU's climate goals and contributes to global emissions reduction efforts.

Graph 2. EU ETS governance by ECCB



Source: CAKE/KOBiZE

STAGE 3: DISSEMINATION ACTIVITIES

The main channels have been used to promote and disseminate the results of the project were:

- **Website:** www.climatecake.pl
- **Social media:** X, LinkedIn
- **Articles** in popular publications, specialist & scientific journals
- Explanatory **leaflets** and promotion **brochures**
- **Media presence:** Interviews & comments to newspapers & TV and participation in podcasts
- **Organisation of numerous conferences and workshops**, such as:
    - 'LIFE Projects Protect Climate and Environment: Sustainable Initiatives for a Better Future' (June 2023)
    - "Shaping the Future of the EU ETS: Achieving 2050 Climate Neutrality with Insights from the New European Commission and the Polish Presidency" (October 2024)
- **Meetings for** the LIFE VIIEW 2050 platform, the Polish administration and the Advisory Board
- **Exchange of ideas:** international meetings of the LIFE VIIEW 2050
- **The results of the LIFE VIIEW 2050 project** have been presented to a wide range of scientific organisations, governments, industry, NGOs and other stakeholders around the world.

Presence of LIFE VIIEW 2050 at international events

During the 4 years of the CAKE/KOBiZE/IOŚ-PIB project, it has been visible at the international conferences, including:

- ECEMP 2023 & 2024
- Carbon Forward Expo 2024
- Workshop with JRC (September 2024)
- EUI Climate Week 2023 & 2024
- Permanent Representation of the Republic of Poland to the OECD Conference (September 2023)
- Congress of the European Association of Agricultural Economists (September 2023)
- European Climate Summit 2023 by IETA (March 2023)

LIFE VIIEW 2050 at COP

We have also participated in the side events during UNFCCC meetings, including **COP26 in Glasgow, UK (2021)**, **COP28 in Dubai, UAE (2023)** and **COP29 in Baku, Azerbaijan (2024)**.

Presence of LIFE VIIEW 2050 at the national meetings

Project team members have been guests at several events organised in Poland, including:

- Local Trends Congress (2023 & 2024)
- Polish Chemistry Congress (2023 & 2024)
- TECHCO Forum (2023 & 2024)

Networking with LIFE projects

During the LIFE VIIEW 2050 project, we have participated in a number of meetings with other representatives of LIFE projects.

- LIFE Information Days by NFOŚiGW (January & May 2024, June 2022)
- Networking with LIFE COASE, LIFE After Coal, RE-ELECTRO 4LIFE, Coolspaces4LIFE, LEGAL HFC 4 LIFE

STAGE 4: PROJECT EFFECTS

- Developing advanced analytical tools and a top-tier team to assess climate and energy policy impacts, focusing on aspects critical for Poland.
- Bridging knowledge gaps by providing policymakers and stakeholders with high-quality insights, supporting Poland's low-emission economic transition and aiding EU decision-making and negotiations.
- Enhancing private sector expertise by engaging businesses and society in implementing and shaping EU climate policy.
- Raising public awareness of environmental and climate issues, especially in relation to energy policy.
- Sharing analytical findings actively through various communication channels.
- Promoting Poland's analytical capabilities within the EU and globally.
- Continuously supporting public administration with reliable information for decision-making.
- Leveraging developed knowledge and skills for new challenges.
- Benefiting diverse stakeholders such as academia, industry, and NGOs.
- Supporting Polish administration in drafting national statements, positions, and guidelines.
- Participating in EU consultations on legal acts.
- Publishing research and presenting findings at conferences.

Krzysztof Bolesta, Secretary of State, Ministry of Climate and Environment

„Out of more than 100 amazing projects, one that I'd like to mention because it is very close to my heart is LIFE CAKE. It's something we built from scratch in Poland, initially with funding from the World Bank, and now we continue it with LIFE funding. It's a unique initiative on a European scale — a Center for Competence and Climate Analysis. Something that, at least when I attend Council meetings in Brussels, others envy us for having. Truly, the LIFE funding contributes to some very exciting things."

Source: LIFE Information Days, NFOŚiGW, 16.05.2024, translation by CAKE

Centre for Climate and Energy Analyses

National Centre for Emissions Management
Institute of Environmental Protection
National Research Institute

Co-funded by the European Union

The project entitled 'The impact assessment of the EU Emission Trading System with the long-term vision for a climate neutral economy by 2050" LIFE VIIEW 2050 (LIFE19 GIC PL/001205) has received funding from the European Union's LIFE Programme and from national funds from the National Fund for Environmental Protection and Water Management.

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