

NATIONAL OPEN ACCESS SCIENTIFIC CENTRE FOR FUTURE ENERGY TECHNOLOGIES



CURRENT STATE OF LONG-TERM MODELLING IN LITHUANIA

Vidas Lekavičius,

Lithuanian Energy Institute, Laboratory of Energy Systems Research

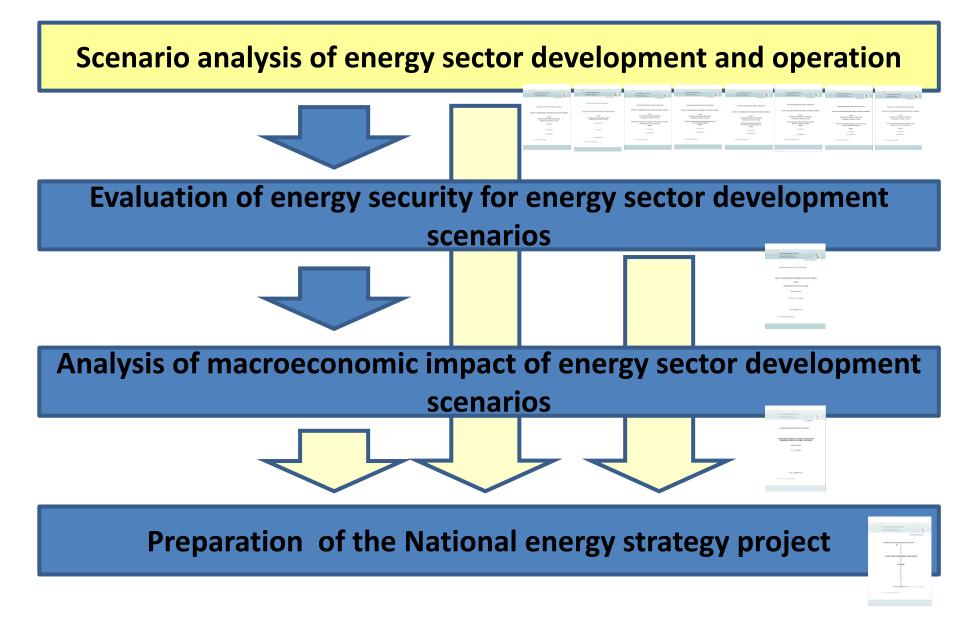


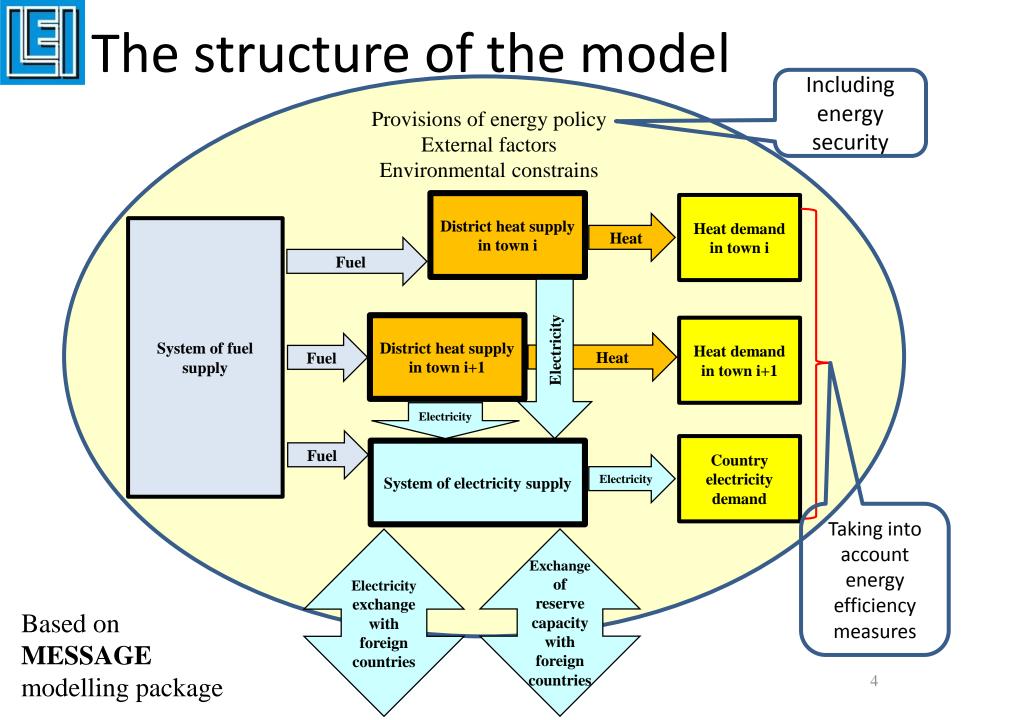
General state

- Lithuanian Energy Institute
 - National Energy Strategy
 - Evaluation of social and macroeconomic impacts
 - Guidelines for emission forecasting
- Kaunas University of Technology
- Vilnius Gediminas Technical University
- •



National Energy Strategy







Analysis of macroeconomic impacts of energy sector development

MESSAGE model for Lithuania

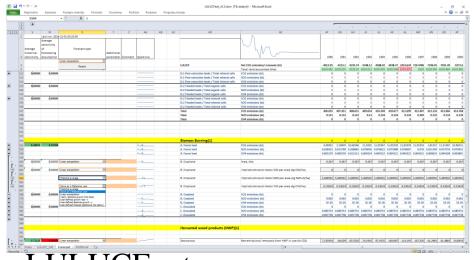
Additional data (technology cost profiles)

Detailed description of energy development scenarios

EnEkonLT CGE model

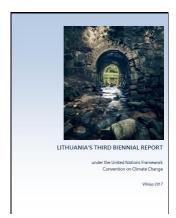


Guidelines and tools for emission forecasting



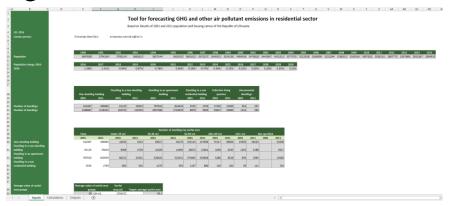
LULUCFeat

LULUCFeat has been employed in the preparation of Lithuania's Third Biennial Report under the United Nations Framework Convention on Climate Change



5 Category (1.3)	Scenario (WEM, WAM, WOM)	CO2 (kt)	CO2 (kt													
6			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	20
7 2. Industrial processes	WEM															
8 2.A. Mineral Industry	WEM		477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	477.32	
9 2.A. of which cement production	WEM		410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	410.14	
LO 2.A. of which other non cement production	WEM		67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	67.18	
1 2.B. Chemical industry	WEM		2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2149.67	2
L2 2.C. Metal industry	WEM															
2.C. of which Iron and steel production	WEM															
4 2.C. of which other non Iron and steel production	WEM															
5 2.D. Non-energy products from fuels and solvent use	WEM		62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	62.60	
L6 2.E. Electronics industry	WEM															
7 2.F. Product uses as substitutes for ODS(2)	WEM															
8 2.G. Other product manufacture and use	WEM															
19 2.H. Other (please specify)	WEM		0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
20 3. Agriculture	WEM															
3.A. Enteric fermentation	WEM															
22 3.B. Manure management	WEM															
23 3.C. Rice cultivation	WEM															
24 3.D. Agricultural soils	WEM															
25 3.E. Prescribed burning of savannahs	WEM															
26 3.F. Field burning of agricultural residues	WEM															
27 3.G. Liming	WEM		24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	24.71	
28 3.H. Urea application	WEM		15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	15.72	
29 3.1. Other carbon-containing fertilizers	WEM															
30 3.J. Other (please specify)	WEM															
31 4. Land Use, Land-Use Change and Forestry	WEM															
Index / Agriculture / Industry repor	t 🧐 /							[4]								-

InAgreat



REEEM (H2020 RIA Project)

- Baltic energy security case study (Finland, Estonia, Latvia, Lithuania)
- District heating case study (Helsinki, Kaunas, Warsaw)
- Ecosystem services case study (Lithuania)
- Carbon leakage and competitiveness
- Distributional impacts of energy transition
- Etc.

BRILLIANT (H2020 CSA Project)

- Trainings and guidance for Estonian, Latvian, and Polish energy modelers
- Long-term energy development models for Estonia, Latvia, Lithuania, and Poland connected to the multi-regional model
- BRImpacts model

Modelling tools

- MESSAGE (Model for Energy Supply Strategy Alternatives and their General Environmental Impact) is the main tool used for long-term energy development modelling
 - Additional in-house developed tools for energy planning
- EnEkonLT CGE model to evaluate macroeconomic impacts of energy development pathways (recursive dynamics up to 2050)
- In-house developed emission forecasting tools
- Other tools

Links between policymaking and modelling

- Deep involvement in some stages of preparation of National Energy Strategy
- Occasional projects
- Different means of stakeholder engagement
- Other involvements in different stages of policymaking

Intern

International linkages

- MESSAGE tool is developed by International Atomic Energy Agency
 - Participation in development and spread of the model
- International projects
- Knowledge exchange
 - Conferences
 - Trainings in Sweden, Philippines, Rwanda, etc.
- Review and evaluation activities (H2020 projects, emission inventories, etc.)



NATIONAL OPEN ACCESS SCIENTIFIC CENTRE FOR FUTURE ENERGY TECHNOLOGIES





Vidas Lekavičius

Lithuanian Energy Institute, Laboratory of Energy Systems
Research

Vidas.Lekavicius@lei.lt