



DEVELOPMENT OF A SYSTEM DYNAMICS MODEL FOR THE IMPLEMENTATION OF ENERGY EFFICIENCY POLICY IN THE HOUSEHOLD AND MUNICIPAL SECTOR

MASTER THESIS TOPIC

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TOPICALITY



European Union has set goals to tackle climate change in the European Green Deal (European Commission, 2019) and energy efficiency is one of the most prominent measures. One of the energy demand side sectors is household sector that is controlled by municipalities and overall government.

TASKS

1. To develop a system dynamics model for households and the public sector
2. Energy efficiency policy analysis and modeling with the developed model to determine
3. Understand the main drivers of energy efficiency diffusion in these sectors.





WORLD EXPERIENCE AND ACTIONS

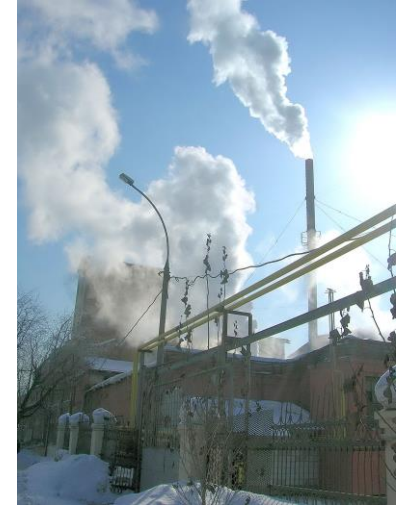
Big action needed	What should be implemented?	Why?	Explanation	One of proof publication
Develop country level strategy with multi-layer implementation of how to reach needed goals through 5 regions and municipalities.	Develop a multi-layered national energy saving strategy with clear challenges for regions, municipalities and households.	Connecting communities from independent households till government creates common understanding of internal and external responsibility and understanding of actions needed to aligned urban development between the national, municipal and community level by energy strategies.		«The application of municipal renewable energy policies at community level in Denmark: A taxonomy of implementation challenges» "Municipal energy strategies in communities: towards a national understanding of communities and implement action challenges"
Education of responsible person	Introduce training for staff with expert consultants	Officials are not industry professionals, but probably have the necessary knowledge.		«A City Capability Assessment Framework Focusing on Planning, Financing, and Implementing Sustainable Energy Projects»
Force the development and implementation of energy saving measures	Municipalities to introduce sanctions for non-compliance with the law	The three factors –simultaneous implementation of several policy instruments, coordination of several policy instruments and correct sequence of implementation of policy instruments within a mix –are crucial and their role in real-life decision making is often underestimated.		«Key Factors for Successful Implementation of Energy Efficiency Policy Instruments: A Theoretical Study and the Case of Latvia»
Residents ease the cost of being able to insulate housing	Support tool with 50% insulation costs	The CoM initiative: local authorities to take voluntary actions to meet and exceed the 20 % GHG by 2020 only 11 % of municipalities, which should have submitted their monitoring reports, have submitted them.		«Towards zero-energy buildings in China: A systematic literature review.» «Low carbon municipalities. The impact of energy management on climate mitigation at local scale.»
Reduce fossil emissions to save energy. Achieve global pollution targets	Reduce CO2 emissions by 10%	Reductions of environmental impacts are partly measured in terms of CO2 emissions, making a direct connection to the use of fossil resources in energy production.	The Danish definition technically oriented, whereas the definition from the UN is more concerned with softer aspects.	«A comprehensive framework for strategic energy planning based on Danish and international insights»
Long - term and forward - looking action plan	Separate the municipal budget and separate energy	Municipalities will be forced to use funds for energy. Each local authority – and its actors (public officials, politicians, mayors) – are thus located in, both, narrow and wider circles with different obligations. This is particularly important, when long-term decisions about climate and energy have to be made.		«Local government innovation in the energy sector: A study of key actors' strategies and arguments» 11 Decentralised renewable energy: Scope, relevance and applications in the Indian context



TO EXPLORE

Boundaries for the systemdynamic model:

- Organisations
- Communication
- Financial
- Sanctions
- And more





THANK YOU



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