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## Analysis of non-ETS sector goals using climate change indicators

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### Abstract

The implementation of the European Union (EU) requirements to limit greenhouse gas (GHG) emissions from sectors not covered by the EU Emissions Trading Scheme (non-ETS) have implications to state development. These emissions mainly result from energy, agricultural, transport and waste sectors. Several groups of scientists in Latvia using different models have estimated necessary measures to achieve expected non-ETS target, however, it seems difficult to implement these proposals by defining state policy. One of the reasons is high uncertainty about socioeconomic impacts. This article proposes that other reason may be lack of common climate change and other sustainability indicators as well as methodology, which makes difficult to compare results from different models, as well as to compare economical effect of measures proposed for different non-ETS sectors. Other problem is that modelling usually focuses on one particular target (for example non-ETS), however policy makers must focus on implementation of different sometimes synergic (non-ETS and energy efficiency), but sometimes contradictory (non-ETS and agricultural development) targets.

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*Keywords:* sustainability indicators; climate change policy; non-ETS; the case of Latvia; low-carbon strategy; literature review

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### 1. Introduction

The aim of this study is to analyse how common climate change and other sustainability indicators can improve policy decisions for reaching non-ETS goals as well as other development projects.

The European Union new legislation requires GHG emission reduction for domestic EU emissions of at least 40 % in 2030 relative to emissions in 1990. The EU target should be shared between the EU Emission trading system

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(ETS) and what the Member States must achieve outside of the ETS. The ETS sector will deliver 43 % reduction in GHG in 2030 and the non-ETS sector – 30% both compared to 2005. The 2030 policy framework is based on full implementation of the 20/20/20 targets and fair sharing of efforts between Member States according to their specific circumstances and capacities [1].

Latvia's commitment for the non-ETS sectors is that emissions may be increased by 17 % between 2005 and 2020 (EU ETS scope 2008–2012, excluding aviation) and in 2020 they cannot exceed 9.9 Mt CO<sub>2</sub> eq. Though it is projected that under the “scenario without additional measures” in 2020 GHG emissions in the non-ETS sector will increase by 8.3 % as compared to the year 2012, they will not exceed the annual emission allocation. The amount of projected GHG emissions under the “scenario with additional measures” is by 7.9 % lower in the year 2020 than the projected emissions under the “scenario with existing measures”. Up to 75 % of total GHG emissions in Latvia are generated from non-ETS sectors: transport, agriculture, waste management and energy and industry not included in ETS [2]. Latvian non-ETS sector 2030 goal have not yet been proposed, but target can be expected around 8 % decrease from year 2005 levels.

In 26 March 2014 Cabinet of Ministers adopted new Latvia's Environmental Policy Strategy 2014–2020” (Strategy) [3]. The Strategy is the national level planning document for the environmental sector that includes directions for low-carbon policies development, low-carbon technology implementation and sustainable land management in farming. Here are some of the topical problems for ensuring GHG emissions reduction and CO<sub>2</sub> removal, solving of which requires implementation of definite policy identified in the Strategy:

- Lack of unified policy for limiting GHG emissions concerning actions, not included in the EU ETS (inadequate integration of climate policy objectives in separate sectors policy planning documents, support instruments and measures taken, especially in the agriculture and transport sectors);
- No directions have been developed for promoting low carbon economy;
- Insufficient economic and technical justification of support mechanisms and misalignment of economic instruments hamper the promotion of wider use of renewable energy resources [2, 3].

There had been many research papers and projects, a lot of measures had been proposed – what is the explanation for the lack of unified policy? Is it possible to indicate common socioeconomic indicators to compare different studies in the field? What may be other reasons why policy for limiting GHG and promoting low carbon strategy is considered insufficient?

## 2. Method

In this article we analyze the research done in Latvia in GHG abatement field compare it with similar investigations and try to find out reasons why it is difficult to implement low carbon strategies in the policy making process. The main focus of this research was on sustainability indicators describing the processes.

Logical framework of modelling methodology described in [4] was used as example for the analysis of importance of climate change and other sustainability indicators at different stages of modelling. The findings may be relevant to other modelling methodologies.

If we want to use indicators for the policy planning process it is important to have answers to the following questions. Are the indicators sufficiently described? Can the indicators be used outside the particular model? Can the indicators be used in different sectors, for example to compare measures in different non-ETS sectors – energy, transport, waste, agriculture? Can we use the same indicators to assess and compare measures aimed to reach other targets, for example energy efficiency targets? Can we use the indicators to assess how the same measures contribute for reaching different targets – for example non-ETS, energy efficiency and renewable energy targets to achieve maximal synergy? Do we have indicators to assess other positive or negative influences of proposed measures, including assessment ecological, economic, social and possibly even cultural sustainability?

Are the proposed measures economically and technically feasible? Is the political feasibility of proposed measures assessed – for example fossil energy tax versus renewable energy subsidies?

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