

CLIENT

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Subject: summary of the study „Impact assessment of the system of the sustainable bioenergy in the planned renewable energy policy framework for 2020-2030”

Introduction

The impact analysis has been conducted in accordance of the public procurement from November 01, 2016¹. The goal of the client was to assess the economic impact of the planned sustainability and greenhouse gas saving measures on forest and energy sectors.

Outcome of the new Union wide renewable energy targets may be that the harvesting of the biomass will not be managed in sustainable manner and biomass will not be used in efficient energy installations. To reinforce sustainability of bioenergy the European Commission (EC) has proposed amendments to the renewable energy directive no 2016/0382 (**Directive**)².

Outcomes of this analysis will be used to support designing of Estonian positions regarding the proposal of the Directive and in preparation of respective legal acts in the later phase. The analysis has been conducted in the period of November 2016 to March 2017.

This analysis was ordered by the Government Office's Strategy Unit and has been funded from the Cohesion Fund's 2014-2020 priority axis no 12 "Administrative capacity", measure no 12.2 "Development of quality of policymaking". Analysis was initiated in cooperation with Ministry of Economic Affairs and Communications, Ministry of the Environment and Ministry of Rural Affairs.

Methodology

During the course of work the need, opportunities and target groups of the verification obligation were defined and identified. On the basis of costs of the verification measures economic impact of different measures in forest and energy sectors were quantified. Thereby, the prices of voluntary certification services, which are already on the market today, were add to unit prices of respective forest and energy products.

During the analysis, the research team searched for answers to the following questions:

- Are today's regulations (forest act, etc.) sufficient to fulfil the sustainability requirements of harvesting and use of biomass?
- Is it necessary and how to prove sustainability of the woody biomass, which is gathered from not forest land (agricultural and other land, imports, industry residues)?

¹ <https://riigihanked.riik.ee/register/hange/179649>

² Euroopa Komisjoni direktiivi 2016/0382 „On the promotion of the use of energy from renewable sources (recast)“ eelnõu

- How restrictive are greenhouse gas (GG) saving requirements to energy production and export of biomass fuels?
- Given the impact of the LULUCF requirements (i.e. GG emission = GG saving): how keeping of the balance will affect the availability of biomass resource?
- What kind of impact could appear by applying cascading and mass balance systems?

Summary of the results

- The Directive enforces the criteria for sustainable use of biomass fuels (Art 26 §2-6) and GG savings (Art 26 §7) to distinguish the energy from biomass which:
 - contributes towards the Union target and Member States renewable energy share;
 - are measuring compliance with renewable energy obligations, including the obligations set out in Articles 23 and 25 of the Directive;
 - is eligible for financial support for the consumption of biofuels, and bioliquids and biomass fuels.
- The current sustainability system of wooded biomass in Estonia is based mainly on forest law. In parallel voluntary certification schemes are in use – these are in use due to the requirements of export markets (wood pellets and woodchips) mainly. For example, from main export markets, the UK has established national sustainability requirements on energy wood and in Denmark, respective requirements are set by the union of energy producers (combined heat and power). According to the rules, supply chain of wooded biomass fuels, imported to those countries, needs to be certified by the recognised schemes (SBP, FSC, PEFC).
- Backed by the Union wide renewable energy targets by 2030, the Commission (by using PRIMES model) forecasts 47% increase in consumption of biomass fuels by 2030 in comparison to year 2010 – with this, biomass is contributing to 27% share of renewable energy in total energy consumption of the Union. The share of wooded biomass in total biomass consumptions is decreasing (Y2015 64%; Y2030 ca 50%), however expected growth is still 35% in the period of 2010-2030. **This means increasing export opportunities for Estonian energy wood producers, meeting precondition to prove that biomass fuels produced comply with sustainability requirements.**
- Share of energy wood in primary energy produced in Estonia was 15,6%³ in Y2015 and has increased by 2,2 times during 2008-2015. Energy wood is also considerable export article: in 2015 the export was over m160€, which accounted 1,4% of whole export of Estonia. Dominating article in the category were wood pellet with m124€ export value in 2015, of which majority (83%) was exported to the UK and Denmark. Main competitors in EU are Latvia and Germany, and from outside EU the USA and Canada.
In general, competitive position of Estonian energy wood producers within EU is strong and to keep the position on export markets voluntary certification of sustainability in forestry is spreading in the leadership of pellet producers.
- In general Estonian Forest Act fulfils the sustainability requirements set by the Directive (Art 26 §5), however there may be a need to amend the regulation of protections of key habitats – this is today voluntary for Estonian forest owners. Today Estonian state has protection contracts on ca 500ha in private forest out of 2500ha (i.e. 20%) with key habitats. Compensation of all key habitats in private forest would cost to state about 875 thousand euros a year (350 euros per hectare), in 2016 it was 160 000 euros.
- Even in case Forest Act would meet fully the requirements of the Directive, need for voluntary certification schemes will remain, because it is questionable whether energy producers on main export markets see national regulation sufficient. Besides, the biggest export market, the UK (58% of wooden pellets), is going to leave the EU soon.

³ This does not account energy wood consumed in private households;

Already today in Estonia, it is possible to join with the group certification, which are affordable also for small forest owners. **According to estimates, even in case the certification of biomass fuel supply chain will be made obligatory for local energy producers (installations over 20MW), final energy prices and profitability of forest owners or fuel producers would not change considerably.** Estimated costs of certification for the small forest owners is about or even below 1% of the potential revenue from sales of forest materials.

- Certification of the biomass fuel producers – second link in supply chain of energy wood – has even smaller impact on their revenues, accounting less than 0,1% of the revenues.
The third link in the supply chain i.e. energy producers (fuel capacity over 20MW for solid biomass fuels and >0,5MW for gaseous fuels installations) are obliged to conduct (Art27 §1) the mass balance report and let it audit by independent body. The mass balance provides information about sustainable use of biomass and GG savings in energy production. Based on audited mass balances of energy producers, Member states shall submit the consolidated reports to the Commission.
Although the methodology of mass balance system is not in place, based on consultations with stakeholders we could presume that the costs of mass balance system are not considerable and will have no impact on energy prices in Estonia.
- The requirements on GG emission saving are described in the Article 27 §7of the Directive. They are imposed to the bigger electricity and heating installations starting operations after 01.01.2021 (80% GG saving) or 01.01.2026 (85%). In the Scenario 1 the situation was tested where GG saving (50%) is required also from installations, which are already operational.
The energy producers can assess the savings based on default values provided in the Annex VI of the Directive or they can estimate installation specific values. **According to our assessment, the default values as provided in the Directive are not restrictive for potential new installations on wood chips in Estonia. Also, they do not potentially restrict export of wood pellets to the current main export markets in EU.**
- During the period of 2021-2030, every EU member state has to ensure, that LULUCF (land use, land use change and forest) sector's GG emissions does not exceed the carbon binding volumes. The reference emission values for Estonia are planned to be set in the new national forest account plan (deadline 31.12.2018), thus the exact calculations on how much wood can be used in the energy sector, before it starts negatively affect the LULUCF counting, are not present today.
There is not possible to provide exact estimated on critical logging volumes today, only after national forest account is submitted, there is possible to assess how restrictive are LULUCF requirements to forest sector.
- Cascading principle prioritises the material use of wood before its conversion to energy. The principle does not restrict use firewood and forest residues for energy purposes.
According to the stakeholders, interviewed during this study, the general understanding is that cascading shall be driven by market forces and today there is a lack of demand in some market segments (i.e. pulp and paper sector) what directs wood towards energy sector. **Strict introduction of cascading principles would influence free functioning of market forces, optimal use of resources and economic development.** Some principles of cascading are embedded also for example into LULUCF rules.
- Obligation of member state is to submit the consolidated information about sustainable use of biomass and GG savings (Art 27 §3) to the Commission. Member state shall gather respective information from economic entities in their countries (Art 27 §1). For this, **member state has to build up respective system for information collection, verification and submission.** This shall include also elaboration of the methodology for mass balance reporting.
- Directive will not regulate the woody biomass, which is gathered from not forested land (agricultural and other land, imports, industrial residues). However, the energy producers have to prove the sources of the biomass. The certificates which are in use today enable to prove the sources of wood from not forest land. If required, the importers and forest industries have to certificate their products as well.