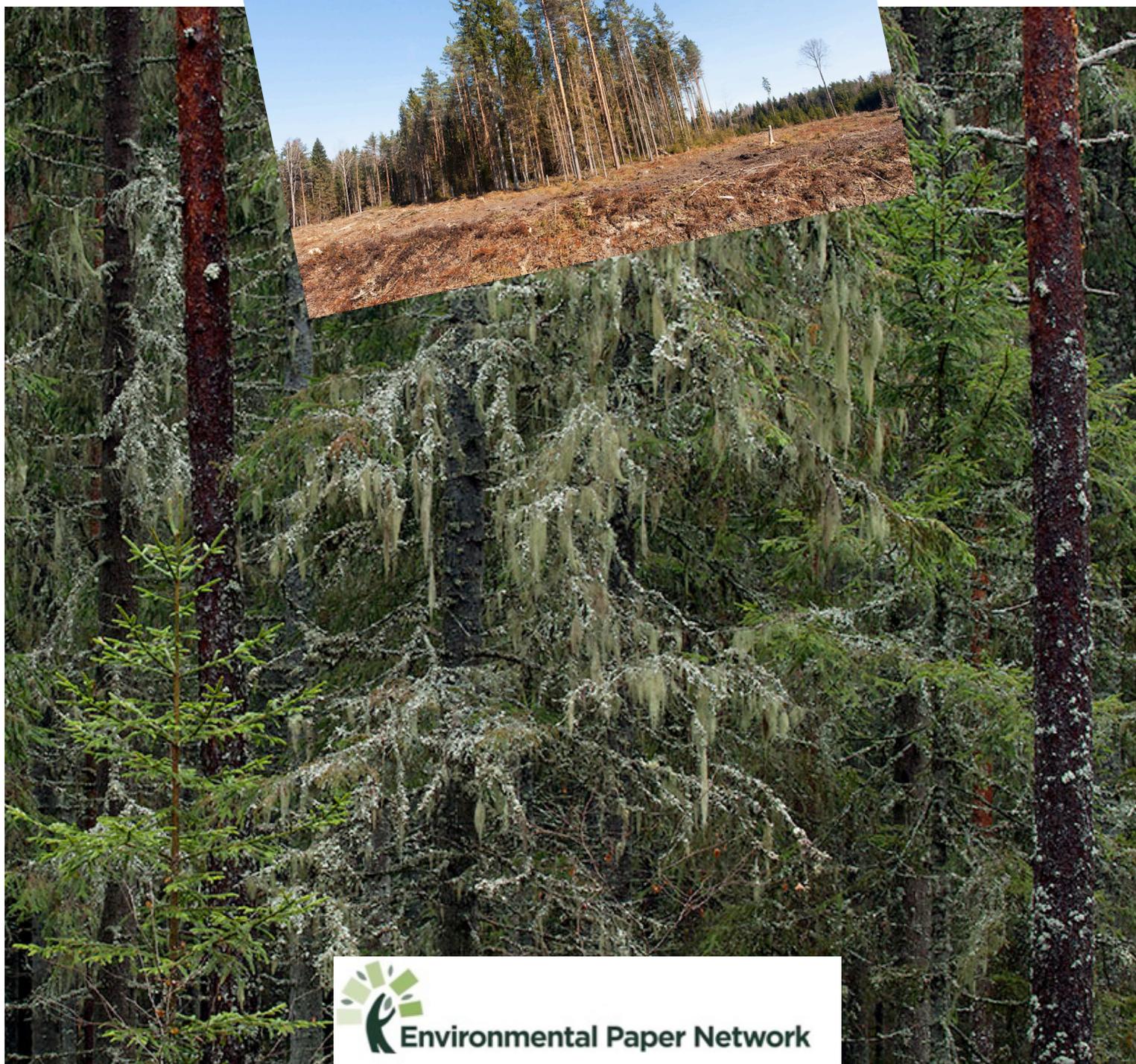


Bio-refinery: new name, dirty old story

Concerns about pollution, forest degradation and climate change emissions from an Estonian pulp mill and biomass energy plant

A discussion document



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Concerns about pollution, forest degradation and climate change emissions from an Estonian pulp mill and biomass energy plant

EPN Discussion Document 7

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© May 2018

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Introduction

This document discusses an industrial proposal in Estonia for a ‘biorefinery’ that is being promoted by a consortium of forestry companies, called Est-For Invest OU (Est-For). Although the term ‘biorefinery’ sounds like a new kind of facility, in fact it would be a pulp mill using old-fashioned technology with a wood-burning energy plant attached. According to Est-For, the biorefinery would start production in 2023, with a capacity of 700,000 tonnes of market pulp per year and substantial environmental impacts. There are now calls on the Estonian government to stop this environmentally and socially dangerous project. This document explores the concerns of civil society, and in particular the environmental and social risks associated with the project.

Executive summary

A commercial scale biorefinery that will create energy and pulp from trees has been promoted in Estonia in 2017 by a consortium of forestry companies, called Est-For Invest OU (Est-For). Although the term ‘biorefinery’ sounds like a new kind of facility, in fact it would be a pulp mill using old-fashioned technology with a wood-burning energy plant attached. According to Est-For, the biorefinery would start production in 2023, with a capacity of 700,000 tonnes of market pulp per year. The mill will require 3million cubic metres of wood (mostly pine, spruce and birch), which is around a quarter of the current total Estonian timber production. In the last 15 years Estonia’s logging levels exceeded the capacity of natural ecosystems to fully recover, putting at risk threatened species like the flying squirrel, eroding populations of forest species and adversely affecting forest health. The new mill risks further increasing wood demand and consequent pressure on the county’s forests.

Despite Est-For’s claims that the mill will produce ‘clean energy’, the impact it will have on forests will result in increasing CO2 emissions.

Water pollution is a further concern. The mill will be built near the second largest Estonian river, Emajõgi, and will not use totally chlorine free technology (TCF), nor a closed water cycle, putting at risk local water ecosystems, which are already under severe stress. The mill will discharge a huge amount of effluent (1.2 % of the river flow), containing chloride, potassium, carbon, calcium and sulphate compounds, threatening the credibility of national plans to reduce the river pollution to meet European Union requirements.

Scientists, environmental organisations, politicians and local citizens have voiced their concerns about the negative impacts of the new mill. Recently the City Council of Tartu, the city nearest to the mill, released a strong position statement opposing the project. This document scrutinises their concerns and concludes by questioning whether the project can ensure sustainability and avoid damage to Estonian forests, rivers, lakes and air and to the global climate.

Overexploitation of Estonian forests

The planned Est-For pulp mill will require 3 million cubic metres of pine, spruce or birch wood each year, a volume equivalent to a quarter of the total national timber production. This will, cause growth in demand that will exert further pressure on Estonia’s already overexploited forests.

Estonia has more than 50 % tree cover. According to the UN’s Food and Agriculture Organization (FAO), 90 % of these forests are “naturally regenerated” and 3 % are old-growth forests. The country is the fourth most forested in Europe, ranking eighth on the 2016 Environmental Performance Index.¹

However, Estonian forests are shrinking and under growing pressure from the forest industry. According to an Organisation for Economic Co-operation and Development (OECD) environmental performance review, felling takes up to 91% of the forests’ productive capacity. The report recommends Estonia to: “encourage sustainable forestry management, including by limiting the intensity of forest use, and disseminating knowledge on sustainable forestry practices among private forest owners.”²

¹ Global Forest Watch, Estonia, <http://www.globalforestwatch.org/country/EST>

² OECD, Environmental Performance Reviews: Estonia, Highlights 2017, http://www.oecd.org/environment/country-reviews/OECD_EPR_Estonia_Highlights.pdf

Estonia's Ministry of Environment claims that Estonia's forests are currently expanding in size, but according to scientists, forestry practice reports are misleading, as they mix commercial forests and protected areas. The average age of Estonian forests, scientists say, is decreasing, with harvests surpassing the capacity of the forests to regenerate. Scientists have also called for expansion of protected areas to compensate for conversion of old growth forests into commercial forests or plantations, in order to preserve biodiversity and forest ecosystem services.³ Even more misleading is that the Ministry accounts areas that have been clear-cut as "forest".⁴

Asko Lõhmus, lead research fellow of conservation biology at the University of Tartu, stressed in an interview with Mongabay that according to his research Estonia is actually losing forest.⁵ This conclusion is confirmed by satellite data from the University of Maryland, showing that Estonia lost more trees in 2015 than in any of the previous 15 years, with the exception of 2011. In total, the country lost around 285,000 hectares of tree cover between 2001 and 2015 while gaining only 90,000 hectares of new young forest.⁶

According to the Nature Conservation Commission of the Estonian Academy of Sciences, the country's forest management is now unsustainable, and its practices do not guarantee biodiversity conservation, take little account of ecosystem services and therefore need to be changed.⁷

A scientific study by the University of Tartu⁸ shows that 40% of polypore species are potentially threatened by forestry activities. These fungi are used as indicators of biodiversity conservation according to the EU Habitats Directive, and their poor condition reflects the general health of Estonian forests.

Most of the pressure on Estonian forests comes from the State Forest Management Centre (RMK) which is responsible for forest management and management of protected areas. RMK, will provide most of the timber sourcing the Est-For mill. (see below, in Governance and ethical conduct)

RMK in theory should be a model for private forest owners, but in reality it is driven by commercial interests. On 9 September 2010, the National Audit Office published a troubling audit stating that "Reasons for unsustainable

A decade of logging intensification

During the last ten years, Estonian forests have faced a dramatic intensification of logging, as a consequence of progressive weakening of the regulatory framework:

- In 2004 forests outside protected areas lost special status and protection.
- In 2007 clear-cutting took place on 20,800 hectares (producing 6.2 million cubic metres (m³) of timber), in 2014 36,700 hectares was cleared (producing 10.4 million m³ of timber), a growth rate of 76 %.¹
- In 2008 the government turned forest management plan from a mandatory requirement for landowners into a mere recommendation.
- In 2013, requirements for clear cutting and forest notification were further relaxed.
- In 2014, a new Forest Act increased the permissible first year clearance from 55 % of total timber volume on plots to 65 %. A 2017 amendment increased this to 80-85 % of the forest.¹
- In 2017 the Estonian ministry planned to lower the rotation period in fertile areas from 80 years to 60, along with relaxing other conditions. The shorter rotation period for spruce (the industry's favourite tree) has been motivated by a perceived fibre shortage. Having access to middle-aged spruce forests would increase production.

³ Eesti Teaduste Akadeemia - Looduskaitse Komisjon, Metsanduse olukorrast, Taartus, 22 January 2018, <http://www.zbi.ee/talkk/materjalid/Eesti%20TA%20LKK%20margukiri%20metsandusest.pdf>

⁴ Rainer Kuuba, Miks ministeerium keeldub diskussioonist ja ründab praeguse metsapoliitika kriitikuid?, Sirp, 9 February 2018, <http://www.sirp.ee/s1-artiklid/c21-teadus/miks-ministeerium-keeldub-diskussioonist-ja-rundab-praeguse-metsapoliitika-kriitikuid/>

⁵ Mongabay, Estonia's trees: Valued resource or squandered second chance?, 20 October 2017, <https://news.mongabay.com/2017/10/estonias-trees-valued-resource-or-squandered-second-chance/>

⁶ Global Forest Watch maps (tree cover gain, tree cover loss) <http://bit.ly/2oH52nC>

⁷ Heureka, Teaduste Akadeemia looduskaitse komisjon: jätkusuutmatu metsandus vajab muutmist, 24 January 2018, <https://heureka.postimees.ee/4386435/teaduste-akadeemia-looduskaitse-komisjon-jatkusuutmatu-metsandus-vajab-muutmist>

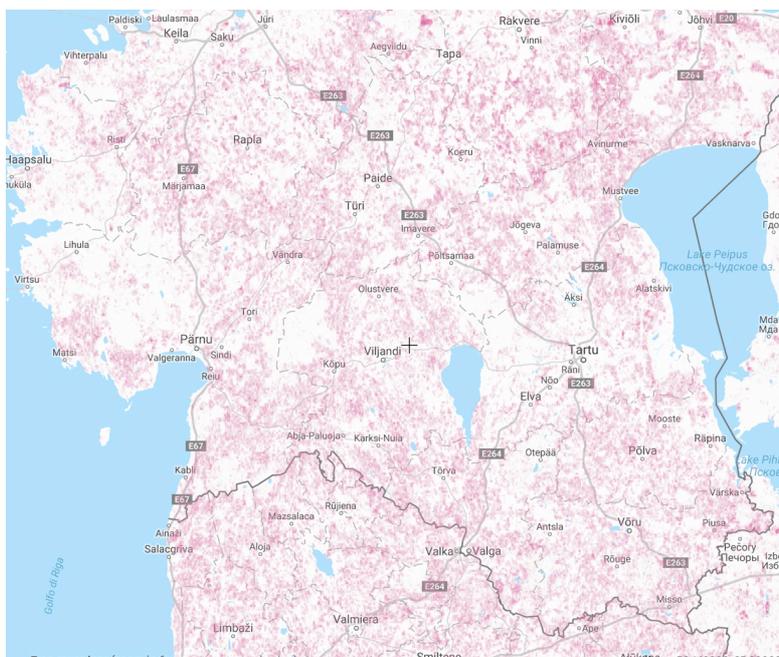
⁸ "Kadri Runnel, Conservation status of Estonian polypores, University of Tartu, Faculty of Science and Technology, Institute of Ecology and Earth Sciences, 20 December 2017, <https://www.etis.ee/Portal/Projects/Display/954e8120-3cc4-419c-aa62-377251dbcb76?lang=ENG>

forest management are also inherent in the nature of RMK which is a commercial agency interested in earning profits and in increasing the income earned” and “The National Audit Office sees a conflict of interests between the current functions of RMK.”⁹

The national auditing office also stated that RMK’s accounting of logging in state forests was not accurate, providing only aggregated data that “does not take into account the huge differences between forests both from economic and ecological aspects”.

The report added: “If the clear-cut practice is continued in state forests at the current volumes, the areas of old stands will considerably decrease in these forests in the next decade.” The Environmental Ministry rejected the suggestions and over the last decade, forest quality decreased, as predicted”¹⁰

As logging in Estonia has reached an intensity that is no longer sustainable, it is therefore very dangerous to build a new mill that will consume one quarter of the total national wood production, as this will undoubtedly lead to further intensification of logging practices. The Est-For management claims that there will be no intensification of logging due to the new mill, as it will use timber that is otherwise exported. But according to Raul Rosenvald, forestry researcher at the Estonian University of Life Sciences, “the raw material needs can not be covered by the current logging capacity”.¹¹ Wood waste that Est-For plans to use is already processed by panel producers, and furthermore Rosenvald states, “it is not possible in the long term to intensify logging capacity and also meet the principles of sustainable forest management.” Rosenvald noted that since logging is regulated by demand and prices and, as the plant will increase the demand for wood, thus raising its price, logging will increase. Therefore, he recommends the mill capacity should reduce dramatically, and use different fibre (less spruce and more birch) to meet the actual conditions of Estonian productive forests. Furthermore, the new European regulation on accounting of emissions from land use, land use change and forestry (LULUCF) will require less logging of Estonian forests, which is incompatible with existing logging rates and even more so with further logging intensification.¹²



Estonia, tree cover loss (in red) <http://bit.ly/2oH52nC>

⁹ Report of the National Audit Office to the Riigikogu, Tallinn, 9 September 2010
<https://www.riigikontroll.ee/DesktopModules/DigiDetail/FileDownloader.aspx?AuditId=2152&FileId=11309>

¹⁰ Report of the National Audit Office to the Riigikogu, Tallinn, 9 September 2010
<https://www.riigikontroll.ee/DesktopModules/DigiDetail/FileDownloader.aspx?AuditId=2152&FileId=11309>

¹¹ Raul Rosenvald, uidiressurss puidurafineerimistehase jaoks ja tehase võimalik mõju Eesti raiemahtudelem, in: Eesti puidukeemia perspektiivid, Eesti Teaduste Akadeemia, 27 June 2017,
http://www.akadeemia.ee/_repository/file/TEGEVUS/YRITUSED%202017/Puidukeemia_2017.pdf

¹² European Commission – Statement, Commission welcomes agreement on key legislation to tackle climate change, Brussels, 14 December 2017, http://europa.eu/rapid/press-release_STATEMENT-17-5286_en.htm

Biodiversity at risk

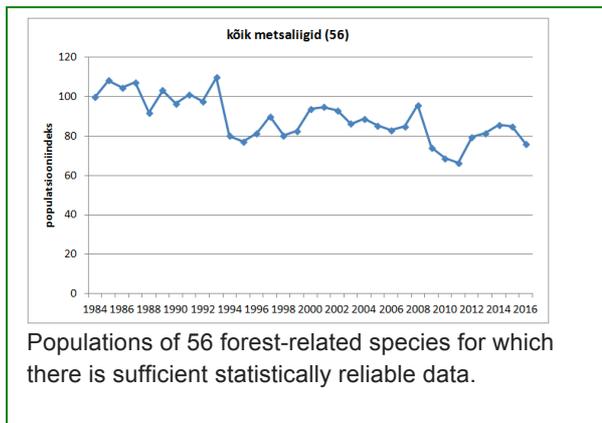
In 2016 a study was published suggesting that intensive management of Estonian forests, especially spruce dominated forests, poses a threat to rare forest fungi.¹³

Even more threatened is the flying squirrel (*Pteromys volans* L.). The population of this rare mammal, whose habitat ranges from the Baltic Sea in the west to the Pacific coast in the east, is decreasing with each passing year.

The Alutaguse forest district, in the north-east of the county, is the last permanent habitat of Estonia's most endangered animal, These animals favour old growth forests, and they are seen as in indicator of the quality and health of the habitat.

In the early 1990s, the habitat of flying squirrels covered 3180 square kilometres, but this has now shrunk to 550, a decrease of more than 80% over the last twenty years. There are currently less than 40 nesting places of flying squirrels left.

In 2013, RMK relaxed protection measures over 16,000 hectares of forest, noting that they represent a considerable financial loss of around 454,000 euros for the forestry sector.¹⁴



Birds also suffer from the consequences of intensive logging. In January 2017, the Estonian Ornithological Society warned that between 1984 and 2016, the abundance of forest-related species has decreased by an average of 60,000 bird pairs per year due to changes to forestry legislation and intensified forest management, leading to significant negative impacts on Estonian forests.¹⁵

¹³ Kadri Runnel and Asko Lõhmus, Deadwood-rich managed forests provide insights into the old-forest association of wood-inhabiting fungi, June 2017, <http://www.sciencedirect.com/science/article/pii/S1754504816301179>

¹⁴ "The RMK understands the importance of these forests and protective measures for preserving nature and variety, but we consider it important to highlight the cost and economic effect of these measures," Koidu Simson, in *Metskonnad tutvustasid tulevikku*, Põhjarannik, 26 June 2013, p 4., <http://www.urban.ee/issue/ee/19>

¹⁵ Estonian Ornithological Society, *Eesti metsadest on kadunud 60 000 linnupaari aastas*, Eesti Ornitoloogiaühing, 18 January 2017.

Water pollution

The Est-For mill will be built near the second largest Estonian river, Emajõgi. The developers will not consider any option to adopt Totally Chlorine Free bleaching (TCF), a technology that allows a closed-water cycle and minimises both water pollution and water consumption. Instead, the mill will use Elemental Chlorine Free technology, which although not using pure chlorine, still uses chlorine dioxide. The long term effects of ECF effluents remain unknown, but chlorinated compounds like dioxins have been linked to cancer and reproductive organ failure in humans.¹⁶ The company claims that the mill will adopt a bleaching system based on “Best Available Techniques” (BAT).¹⁷ However, BAT is not what it seems as it is actually the minimum standard accepted by the EU directive 2010/75/EU, and it allows mills that still pollute with absorbable organic halides (AOX), which threaten freshwater biodiversity.¹⁸ Totally chlorine free (TCF) bleaching does not use any chlorine compounds.¹⁹ It is no more expensive than ECF and after recent technological improvements it is gaining great interest in the pulp sector.²⁰



The Emajõgi river

¹⁶ WHO fact sheet, Dioxins and their effects on humans, octoberr 2016, <http://www.who.int/mediacentre/factsheets/fs225/en/>

¹⁷ Est-For Invest, Environmental and economic impact, <http://biorefinery.ee/en/environmental-economic-impact/>

¹⁸ Best Available Techniques (BAT), Reference Document for the Production of Pulp, Paper and Board. Industrial Emissions Directive 2010/75/EU Integrated Pollution Prevention and control. 23015. eippcb.jrc.ec.europa.eu/reference/BREF/PP_revised_BREF_2015.pdf

¹⁹ Environmental Paper Network, Detoxing Future Pulp Production, Why it's time to revisit the pulp bleaching debate, 2 January 2017, <http://environmentalpaper.org/wp-content/uploads/2017/09/170112-Detox-paper-EPN-discussion-document-2-1.pdf>

²⁰ Environmental requirements – Tissue in Europe, Tissue World Magazine July/August 2016.

https://issuu.com/tissueworldmagazine/docs/tw-ja16_web/39

However, as Est-For has decided not to use TCF technology, the mill will discharge large amounts of contaminated water into the river. The bioeconomics expert Daniel Paalsson, consulting for Est-For, stated that the mill will involve huge water consumption: 0.7 cubic metres per second, 1.3 % of the full river's average flow. The mill will in turn release 1.2 % of the river flow in effluents containing chloride, potassium, carbon, calcium and sulphate compounds back into the river.²¹ Comparing the Est-for mill to other plants using the same technology, it is possible to estimate that the annual discharge into the river Emajõgi will be around 80 tonnes of AOX. Furthermore, according to Daniel Paalsson, this effluent could increase the average temperature of the river water at the release site by approximately 0.3 degrees Celsius.

The Emajõgi river is vital for the country's ecosystems. It flows into the trans-boundary Lake Peipus (on the border with Russia), a unique water system that requires extra effort for its protection and restoration. Lake Peipus is already in a poor condition and the East-Estonia Water Management Plan says it requires urgent rehabilitation: "The Estonian state must ensure the reduction of the pollution load of Lake Peipus so that it would help to achieve the lake's good status by the year 2015 to meet the requirements of the European Union, or by the next deadline in 2021".²² The Estonian government's 2015-2027 East-Estonia Water Management Plan is committed to improving the state of the water by 2027, but the pulp mill fundamentally threatens the credibility of this plan, by further harming the lake's ecosystems.

The Emajõgi river also assures recreational values to a large area of the country, supporting a growing eco-tourism business sector that benefits local communities. Many eco-tourism companies have expressed their concerns over impacts on the river health and increasing logging.

In December 2017, another mill, Estonian Cell, was involved in deep-water polluting discharge to the Gulf of Finland, near to Mahu.²³ Estonian Cell's director and spokesperson Margus Kohava is now representing the Est-For biorefinery project, together with Aadu Polli.

The Strategic Environmental Assessment (SEA)

Analysis of the environmental impact of the Est-For pulp mill was commissioned via public tender, which according to common practice, meant going for the lowest bid. This suggests that the assessment will not be the most robust possible. Yet such a large scale project will heavily impact the local environment and should require extensive high quality analysis. Furthermore, given the scale of such a large project, the usual assessment process would not be sufficient because broader strategic studies are needed to gain a realistic view of the pulp mill's eventual environmental impact. This should include analysis of all possible direct and indirect impacts of the mill's effluents into surrounding ecosystems, impacts on local activities such as tourism and impacts of increased wood demand on forest health and forest-related species.²⁴

²¹ EER, Mill would increase temperature of Emajõgi River at wastewater release site, 12 February 2018, <https://news.err.ee/682658/mill-would-increase-temperature-of-emajogi-river-at-wastewater-release-site>

²² National Audit Office of Estonia, Effectiveness of measures for improving the status of Lake Peipus, Report of the National Audit Office of Estonia to the Estonian Parliament, 26 March 2012, <https://www.eurosaiwgea.org/audits/Audit%20documents/Improving%20the%20Status%20of%20Lake%20Peipus.pdf>

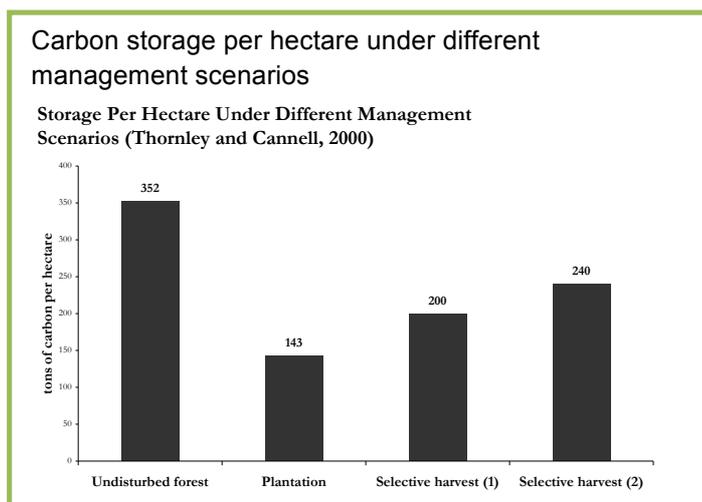
²³ Estonian Cell on poolteist aastat vales kohas heitvett merre lasknud ja valest kohast ka proove võtnud, Maaleht, 22 December 2017, <http://maaleht.delfi.ee/news/keskkond/uudised/estonian-cell-on-poolteist-aastat-vales-kohas-heitvett-merre-lasknud-ja-valest-kohast-ka-proove-votnud?id=80575464>

²⁴ EER, NGOs: Planned billion-euro pulp mill needs more thorough assessment, 13 June 2017, <https://news.err.ee/601808/ngos-planned-billion-euro-pulp-mill-needs-more-thorough-assessment>

The climate issue: carbon neutral or carbon intensive?

Est-For claims that the new mill will be carbon neutral, citing a study it commissioned from the Stockholm Environment Institute (SEI). That study however has been disputed by experts. Kaie Kriiska, a specialist in landscape ecology at the University of Tartu, argued that the analysis has not taken into account possible emissions that would occur at the end of the life span of the paper produced and added that if these had been taken into account, the result of the carbon footprint analysis would have been very different.²⁵

Forest ecologist Asko Noormets, added that the analysis has not considered the carbon footprint caused by the decomposition of branches left behind after logging. He also argued that the mill is going to create new demand for timber and pressure to intensify logging, which in turn may increase emissions.



Using timber to produce paper instead of solid wood, is not a good way to reduce emissions, as Life Cycle Assessments (LCAs) show that paper is short-lived, in many cases taking just a few hours before it ends up in incinerators or in landfills where it produces methane, a very powerful greenhouse gas.²⁶ Some products, such as books, do store a portion of their carbon in carbon ‘pools,’ but this is a very small minority, even in the short term.²⁷ The reality is that harvesting forests for paper products reduces carbon storage in forests and the subsequent loss of those paper products to oxidation increases CO₂ in the atmosphere, as does burning wood for energy to

create those very products. The study commissioned by Est-For from the Stockholm Environment Institute did not consider product end-of-life GHG emissions, because “the biorefinery has no control of such emissions”.²⁸ Lack of control does not mean they can be ignored.

A recent scientific study²⁹ on the impacts of harvest and other disturbances in USA forests concludes: “The highest fractional contribution of carbon(C) loss in all states was from harvest (Table 4), and 64% of these losses were from logging residues [both above- (19%) and belowground (23%)] and mill residues (22%) [compared with losses from other disturbances, such as forest fires]. Across all wood product classes, the production of pulpwood resulted in the highest forest C losses (26 Tg C year⁻¹), followed by saw logs (18 Tg C year⁻¹) [...].”

In simpler terms, logging by the forest products and paper industry contributes the most carbon loss from forests of any impact category, ahead of disturbances such as insect infestations, conversion for malls and housing developments and forest fires.

Moreover, very young or recently planted forests take decades or centuries to get back to the level of carbon storage at the time of harvest. The up-take of carbon dioxide by a tree from the atmosphere requires the action of leaves. Young trees simply do not have the capacity to remove carbon dioxide at the rates of more mature trees. On

²⁵ EER, Two researchers critical of emissions analysis for planned pulp mill, 20 December 2017, <https://news.err.ee/649879/two-researchers-critical-of-emissions-analysis-for-planned-pulp-mill>

²⁶ Siim Kuresoo, Tselluloositehase rohemajanduslik hookepookus, Äripäeva, 8 December 2017,

<https://www.aripaev.ee/arvamused/2017/12/08/siim-kuresoo-tselluloositehase-rohemajanduslik-hookuspookus>

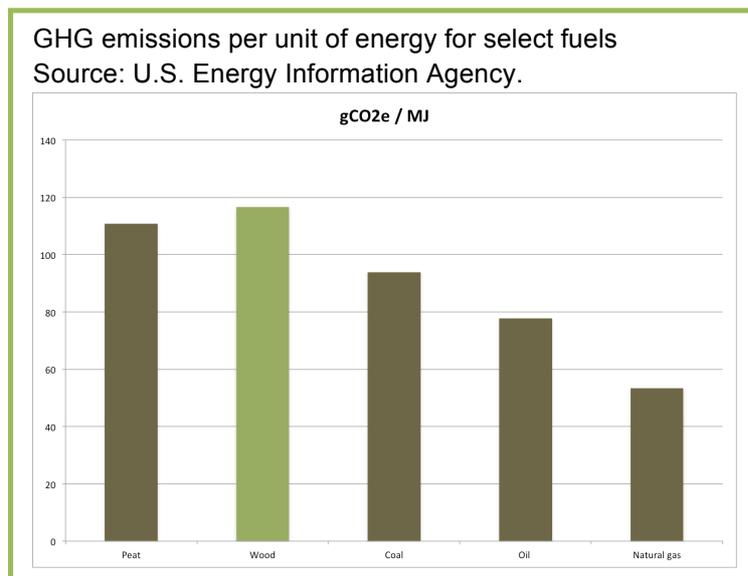
²⁷ Smith, James, et al. “Methods for Calculating Forest Ecosystem and Harvested Carbon with Standard Estimates for Forest Types of the United States.” US Forest Service. General Technical Report NE-343. 2007.

²⁸ SEI, Lifecycle carbon footprint assessment of biorefinery planned to Estonia, Tallinn 2017, <http://biorefinery.ee/wp-content/uploads/lifecycle-carbon-footprint-assessment-of-estfor-biorefinery.pdf>

²⁹ Harris et al. Carbon Balance Manage (2016) 11:24. DOI 10.1186/s13021-016-0066-5

a landscape level, regular harvest (especially short-rotation clearcut operations, which are most common for paper) means lower storage across that landscape and a resulting greater quantity of carbon dioxide in the atmosphere.

The biorefinery is planned to use wood as its energy source. However, using more bioenergy means an increase, not a decrease, in emissions of carbon dioxide from paper mills. A recent report by the International Confederation of Forest and Paper Associations stated that the bioenergy portion of the fuel mix for the industry had increased from 53% in 2004/2005 to 61% in 2013/2014, less than a decade.³⁰



Wood is, in general, a poor energy source. A recent Chatham House report on bioenergy and climate³¹ stated: “Overall, while some instances of biomass energy use may result in lower life-cycle emissions than fossil fuels, in most circumstances, comparing technologies of similar ages, the use of woody biomass for energy will release higher levels of emissions than coal and considerably higher levels than gas.” This is due to the low heating value and higher moisture content of wood compared with other fuels, meaning the emissions per unit of energy is higher.

A new scientific paper reports that even by burning biomass from tree tops and branches left over from forestry operations, net emissions would be still significant: up to 95% of the cumulative CO₂ emitted represents a net addition to the atmosphere over decades. According to the author, “wood-burning power plants emit as much or more CO₂ per megawatt-hour as when they burn coal.”³²

Governance and ethical conduct

Est-For’s managers and “project initiators” are the former manager of Estonian Cell Margus Kohava and Aadu Polli (board member and spokesperson). Mr Kohava is also a former employee of Aadu Polli’s father, Mati Polli. Mr Polli senior is one of the richest men in Estonia and also one of the main investors in Est-For via his trust fund Tristafan OÜ. He is one of the founders of Sylvester forestry (since sold to Stora Enso)³³ and one of the main actors in the Estonian forestry industry. His son Aadu comes from ventures in the “green economy”, with experience in a company selling green carbon credits generated from controversial forestry operations in East Africa. Until 2015, Aadu Polli was managing and industrial director of the Norwegian-registered plantation forestry company Green Resources AS, a company active in Mozambique, Tanzania, and Uganda, which was accused of evicting local people from their traditional land and destroying natural landscapes in order to develop timber plantations generating disputable carbon credits to be sold in Europe.³⁴ Since December 2017, Mati Polli

³⁰ International Confederation of Forest and Paper Associations, Sustainability Progress Report, 2015, <http://www.icfpa.org/uploads/Modules/Publications/2015-icfpa-sustainability-progress-report.pdf>

³¹ Brack, Duncan. ‘The Impacts of the Demand for Woody Biomass for Power and Heat on Climate and Forests.’ Chatham House. 23 February 2017.

³² Mary S. Booth, Not Carbon Neutral: Assessing the net emissions impact of residues burned for bioenergy, Environmental Research Letters, 21 February 2018, <http://iopscience.iop.org/article/10.1088/1748-9326/aaac88>

³³ Äripäeva, Metsandusarimees Mati Polli andis lastele suure osaluse oma valdusfirmas, teised ettevõtjad kinnitavad, et kõige parem on ohjad anda lähisugulastele, 11 December 2017, <https://www.aripaev.ee/uudised/2017/12/11/mati-polli-andis-varanduse-lastele>

³⁴ The Oakland Institute report, “The Darker Side of Green: Plantation Forestry and Carbon Violence in Uganda, November 2014, https://www.oaklandinstitute.org/sites/oaklandinstitute.org/files/Report_DarkerSideofGreen_hirez.pdf and Justiça Ambiental and União

has transferred 60% of his shares of his company Tristafan OÜ to his children, making them co-owners and therefore co-owners of Est-For.³⁵

The Polli duo is now in trouble because of a strange deal between Est-For Invest and the state forest agency RMK. Documents obtained by the TV station *Pealtnägija* show that they concluded an agreement worth at least 300 million Euro guaranteeing the proposed mill half of RMK's pulpwood over a 15-year period.³⁶ Critics of the deal see this agreement as a conflict of interest or even prohibited state aid, which looks all the worse because Mati Polli was chairman of the supervisory board of RMK until December 2016, just before the new mill project was announced.³⁷ Est-For was legally registered on 3 October,³⁸ however the project was not announced until 10 January 2017.³⁹ According to the *Pealtnägija*, the agreement between RMK and Est-For had been signed *before* the project was made public. It is not clear whether the deal had been initially agreed before or after Mati Polli's resignation from RMK's board, but critics note that in either case he could have had an undue influence. RMK's supervisory board chairman is now Andres Taliäär who, after lobbying to intensify the logging rate back in the late 2000s as head of the Estonian Forest and Wood Industries Association, is now Secretary General of the Ministry of the Environment⁴⁰. This 'revolving door' between government agency and industry top jobs weakens the Estonian government's credibility for independent regulation of the logging industry.

Growing opposition from civil society

In June 2017 a group of Estonian NGOs released a statement⁴¹ to highlight the dangers posed by the new mill project to the condition of the Emajõgi river and Lake Peipus and to Estonian forests due to excessive logging. It also highlighted the risk that the mill would not be managed according to environmental principles and criticised the inadequacy of the mill's environmental impact assessment. The Estonian NGOs expressed concern about government choices in recent years to support large companies at the expense of the environment. This has included weakening of environmental requirements and fees, tax breaks for the oil shale and peat industries, allowing the commercial use of Saaremaa's deep-water harbour, and several changes to the Forest Act that gave preference to industrial timber users.

On 27 September 2017 nine Estonian NGOs, together with the Environmental Paper Network, sent a letter to Est-For to stress the inadequate legal framework for forestry, the risk of over-logging fuelled by the mills fibre demand, and the risk of pollution and environmental harm to the Emajõgi river and lake Peipus⁴². No substantial answer came from Est-For to the key issues raised by the letter.

Nacional De Camponeses , The Lords of the Land, Maputo, March 2011, <https://www.open.ac.uk/technology/mozambique/sites/www.open.ac.uk.technology.mozambique/files/pics/d131619.pdf> and Redd Monitor, Green Resources' carbon plantations in Tanzania. Curse or cure?, 2 May 2012, <http://www.redd-monitor.org/2012/05/02/green-resources-carbon-plantations-in-tanzania-curse-or-cure/> - See also the Swedish TV4 programme, "The Forbidden Forest", <https://www.youtube.com/watch?v=COoPVXINbqQ>

³⁵ <https://www.aripaev.ee/uudised/2017/12/11/mati-polli-andis-varanduse-lastele>

³⁶ EER, "Pealtnägija": tselluloositehase ja RMK leping võib olla huvide konfliktis, 31 January 2018, <https://www.err.ee/678954/pealtnagija-tselluloositehase-ja-rmk-leping-voib-olla-huvide-konfliktis>

³⁷ EER, Billion-euro pulp mill deal with RMK may be in conflict of interest, 1 February 2018, <https://news.err.ee/679006/billion-euro-pulp-mill-deal-with-rmk-may-be-in-conflict-of-interest>

³⁸ <https://www.inforegister.ee/14125343-EST-FOR-INVEST-OU>

³⁹ AS Äripäev - Ehitusuudised, Eestisse kavandatakse miljardi euro suurust tööstusinvesteeringut , 10 January 2017, <http://www.ehitusuudised.ee/uudised/2017/01/10/eestisse-kavandatakse-miljardi-euro-suurust-toostusinvesteeringut>

⁴⁰ <http://www.envir.ee/en/secretary-general-andres-taliäär>

⁴¹ NGOs coalition Estonian Council of Environmental NGOs (EKO) <http://www.eko.org.ee/2017/06/keskkonnauhenduste-avalik-poordumine-puidurafineerimistehase-rajamise-kaasnevad-markimisvaarsed-ohud/>

⁴² Estonian Fund for Nature, Estonian Ornithological Society, Estonian Green Movement- FoE, Estonian Seminatural Community Conservation Association, Baltic Environmental Forum, Tartu Students' Nature Conservation Circle, Student's Society for Environmental Protection NGO, West Coastland NGO, Nõmme Tee Selts

In December 2017, the Estonian Fishermen's Community issued a very detailed statement, expressing opposition to the mill due to the high pollution it would cause to the Emajõgi river.⁴³

Not only citizens, scientists and NGOs are worried about the new mill project. A recent survey shows that while most Estonian people welcome projects such as a planned bridge, a submarine tunnel linking to Helsinki and a new a tunnel railway, the majority oppose the new mill.⁴⁴

In March 2018, the City Council of Tartu released a strong position statement opposing the project, drawn up with consensus from all political groups: "Due to the unlawfulness and questionable nature of current procedural steps, the implementation of a national special plan is illegitimate and the procedure for the drawing up of a national special plan must be called off."⁴⁵ Rural municipalities in Tartu County have voiced similar opinions, with seven out of its eight local governments following the city's move. These decisions came after meetings with all stakeholders, including the company promoting the new mill. The City Council of Tartu has announced that it will take action against the state's decision to move forward with the nationally designated spatial plan for the establishment of the infrastructure necessary for the operation of the Est-For pulp mill.⁴⁶

Concerns about the Est-For mill project are spreading in international civil society. On 25 April 2018, forest experts from 25 different NGOs from Europe, America, Asia, Africa and Oceania signed a statement in support of Estonian civil society, calling on the Estonian government to stop the environmentally and socially dangerous project.⁴⁷

In May 2018, Andrus Ansip, the EU's commissioner for the digital single market and former Prime Minister of Estonia, said that the rejection of the project by the people of Tartu should be reason enough to drop the idea.⁴⁸



⁴³ Estonian Fishermen's Community - Eesti Kalastajate Selts, Planeeritav puidurafineerimistehas ohustab Emajõge ja Peipsit?, 20 December 2017, <http://www.kalale.ee/blogi/eesti-kalastajate-seltsi-blogi/1F4>

⁴⁴ ERR, Uuring: Saaremaa sillale "jah", tselluloositehasele "ei", 28 February 2018, <https://www.err.ee/686222/uuring-saaremaa-sillale-jah-tselluloositehasele-ei>

⁴⁵ ERR, Tartu City Council: Pulp mill designated spatial plan must be called off, 8 March 2018, <https://news.err.ee/688145/tartu-city-council-pulp-mill-designated-spatial-plan-must-be-called-off>

⁴⁶ ERR, Tartu to take Estonia to court over pulp mill plan, 19 April 2018, <https://news.err.ee/823206/tartu-to-take-estonia-to-court-over-pulp-mill-plan>

⁴⁷ Joint statement to stop Irresponsible Est-For Pulp Mill, 25 April 2018, <http://environmentalpaper.org/2018/05/joint-statement-to-stop-irresponsible-est-for-pulp-mill/>

⁴⁸ ERR, Ansip changes his mind about billion-euro pulp mill close to Tartu, 3 May 2018, <https://news.err.ee/828305/ansip-changes-his-mind-about-billion-euro-pulp-mill-close-to-tartu>

Conclusions and Recommendations

The Est-For project is being developed in a situation that is already critical, with forests facing increasing pressure and water ecology affected by excessive pollution. The Est-For project would exacerbate the situation, consuming a quarter of the national wood production and using a considerable amount of the Emajõgi River's water, posing a serious threat to the country's environment. It would also be likely to increase the country's carbon emissions.

Environmental organisations are concerned about a boom in wood fibre demand that could lead to a weakening of conservation measures and forest protection. Considering that the developers of the project have a history of leading the intensification of forest exploitation and erosion of environmental values in Estonia, close scrutiny is required to prevent pressure being exerted on the government towards further intensification of felling and weakening of other environmental standards.

We therefore recommend that, before allowing any large investments that will substantially increase the consumption of timber, the Estonian government must make sure that sustainable use of Estonia's forests is assured, including approving appropriate legal measures in compliance with the European LULUCF Regulation.

Before considering finance for any mill project, banks and other financiers should ensure a comprehensive set of safeguards is in place, covering all of the requirements in *Green Paper, Red Lines*.⁴⁹ In the case of the Est-For mill they should pay particular attention to the following issues.

- There are many indications that there is not enough timber from truly sustainable sources to supply the Est-For mill.
- The mill's scale of effluents into the Emajõgi river would irrevocably damage the ecological balance of its water basin.
- Careful scrutiny should be given to claims about greenhouse gas emissions from the mill. So far, the full short-term and long-term forest carbon impacts have not been accounted for in a credible life cycle analysis.

Questions for discussion

Based on these considerations, is there any chance that the mill project can ensure sustainability and environmental justice?

Are potential financiers of the Est-For project aware of the social and environmental risks of this project?

How can stakeholders best work together to prevent damage to Estonian forests, rivers, lakes and air, and to the global climate?

⁴⁹ Environmental Paper Network, *Green Paper, Red Lines Requirements for pulp and paper industry finance*, June 2016, <http://www.environmentalpaper.eu/wp-content/uploads/2016/06/Green-Paper-Red-Lines-1.pdf>