

ANALYSIS OF BIOMASS

in the National energy and climate plans of
Bulgaria, Czechia, Estonia, Hungary, Latvia,
Poland and Slovakia

BRIEFING

Contents

<i>Summary</i>	<i>3</i>
<i>Bulgaria</i>	<i>4</i>
<i>Czechia.....</i>	<i>6</i>
<i>Estonia</i>	<i>7</i>
<i>Hungary</i>	<i>9</i>
<i>Latvia</i>	<i>11</i>
<i>Poland.....</i>	<i>12</i>
<i>Slovakia.....</i>	<i>13</i>
<i>Annex: Sustainability criteria for the use of wood biomass for energy....</i>	<i>15</i>

SUMMARY

This publication analyses the National Energy and Climate Plans (NECPs) in Bulgaria, Czechia, Estonia, Hungary, Latvia, Poland and Slovakia and these countries' measures to support forms of wood biomass.

The majority of the countries plan logging and the use of biomass above sustainable levels. For example, Estonia overcuts forests (approximately 30 per cent more than grows back) and continues peat extraction. In Slovakia, logging grew by at least 75 per cent from 1990 to 2015, which led to a loss of 6 per cent of forest cover also due to very low financing for restoration. The harvest rate is causing a significant reduction in CO₂ capture in Latvia. In Bulgaria, 40% of households are using wood for heating in low-efficiency stoves with significant air quality impact. The Czech Republic projected such an increase of biomass consumption in the NECP that the country would clearly have to import the material. Poland, which has long relied on coal and biomass co-firing for most of its renewable energy production, plans to further expand the use of biomass - and expects CO₂ emissions from biomass to grow and CO₂ storage by forests to decline dramatically as a result. Hungary plans to increase its solid biomass use both for heating/cooling and for electricity generation by 2030, while there have already been problems with over-reliance on biomass and with unsustainable or illegally obtained wood, covered by statistical corrections.

There is a worrying trend of replacing coal with other unsustainable and often non-renewable

fuels, such as unsustainable biomass, gas and/or municipal waste. Energy efficiency measures need to be applied as top priority and several countries, such as Czechia, Hungary, Latvia, Poland, Slovakia should explore options to unlock possibilities for other renewable energy sources (RES) to protect their ecosystems and the climate from excessive use of biomass. Spending billions of Euros from the Modernisation Fund needs to be properly planned to secure a sustainable energy transformation.

Finally, member states need to apply strong sustainability criteria for support of solid biomass from public finance, such as renewable energy subsidy schemes, EU funds, the Modernisation Fund, etc. The European Commission should not approve any support for biomass projects that do not meet sustainability criteria. Such criteria are included in the RED II Directive, although they remain quite broad, and therefore specific sets of criteria should be implemented on the national level. The Slovak example of sustainable forest biomass, described in Annex I, might outline possible practical criteria for policy-making. In order to truly support only sustainable biomass, several other policies need to be considered: The Natura 2000 directives, Biodiversity strategy, Thematic Strategy for Soil Protection and Common agricultural policy (CAP).

BULGARIA

The target for renewable energy share is so low that it will require zero effort from the government to achieve. The plan starts with 16 per cent, which the country already exceeded when RES reached 18.8 per cent in 2016, and rises only to 25 per cent by 2030.¹ In 2020 in the heating and cooling sector, biomass is to cover already around 30 per cent of energy consumption. The plan envisages a further increase to 40% of biomass use in the heating/cooling sector and a minimum increase in other renewable sources of energy.

The target for renewables use by 2030 needs to be increased from 25 per cent to at least 40 per cent of final consumption and at the very least, the renewable electricity target should be 30 per cent, instead of the 17 per cent proposed.

The main concerns with the increased use of biomass in Bulgaria are the 1) low efficiency of the current heating system specially in households, 2) plans for combined burning of biomass and fossil fuels and 3) increased logging plans in high-biodiversity value forests.

The 44 per cent target for renewables in heat and cooling is a target that deserves special attention. It is very likely that Bulgaria is already close to the target if it adequately reports the use of wood for fuel. Many experts in the country speculate that the current renewable energy target has actually been met using this fuel source but not properly reported. This target, like the general one and the two sub-targets for electricity and transport have no sources and no methodology

is described on how they were derived.

Even at the moment around 54% of households are using solid fuel to heat their homes, since the consumption of firewood triple due to lower prices in comparison with coal. It is estimated that between 40-50 per cent from the houses (between 700 000 - 1 000 000 houses) are using wood as the main fuel.² Another 40 per cent use electricity while the EU average is 11 per cent. Improvement of the efficiency of household wood stoves could increase the share of RES in heating, while decreasing consumption and improving comfort, instead of switching to another fossil fuel. Bulgaria has not yet quantified precisely the GHG reductions from its planned energy efficiency programmes for buildings or its programmes to provide energy efficient heating for households. The results of a pilot project in the city of Sofia on changing wood-burning ovens to pellet-burning ovens are to be evaluated some years from now as the project is just starting. The low efficiency of household heating is also closely related to high energy poverty in Bulgaria, but is not targeted in the plan. Currently energy poor receive energy aid in the form of coal or firewood for heating. There is no plan to phase out these subsidies and replace them with measures to actually bring these people out of energy poverty by increasing the energy efficiency of their homes and by ensuring energy efficient heating. ESCO options are not mentioned but should be.

Household renewable energy production is almost non-existent in Bulgaria due to lack of appropriate legislation and subsidy schemes. Solar thermal could also further unexplored in district heating and many public buildings as the use of hot water for hygiene as hospitals and sports facilities like stadiums and public swimming pools.

Use of the biomass in industry is planned to contribute with 554 Gg per year CO₂ reduction.

1

The reasons given for this are: 1) Bulgaria is the poorest country in the EU and the target is compatible with its GDP 2) Significant expansion of hydropower and wind are almost impossible due to Natura 2000 areas 3) An increase in renewables could destabilise the system - renewable electricity generation was growing until 2016 but there are already claimed to be some issues with the grid.

2

Bulgarian National Plan for Action on Energy from Forest Biomass 2018-2027 - there are no precise statistics about households heated by firewood and the estimate is based on the overall annual firewood consumption, number of houses and average annual firewood consumption per house (p.148)

The main method, however, is burning biomass waste in combination with fossil fuels. Renewable energy except for the use of waste biomass have found no mention here which means the government does not intend to stimulate industry to produce and consume its own energy from other renewable sources, whereas there is potential for that. In energy sector GHG reduction measures, again biomass as an alternative fuel is supposed to bring 600 Gg CO₂ reduction per year.

The use of biomass for the production of energy is subject only to a note that it will follow new EU rules. However the reality on the ground in Bulgaria raises a few issues. Biomass is planned for co-firing in large thermal power plants that are not CHP, together with coal and mixed municipal waste. This means that waste heat will not be utilized and the biomass ash that could otherwise be used as fertilizer will be mixed into the toxic ash from coal and waste and will have to be landfilled under special regimes. This is not a smart use of biomass and is not an integrated policy approach. Climate policy

cannot be separated from other environmental components, nor from other policies such as prosperity and the standard of living. All these are horizontal policies and should not contradict the path of sustainable development and the circular economy.

Use of sustainable biomass – The sustainability of the biomass produced in Bulgaria or imported is just mentioned as an issue in the draft NECP. The Strategic Impact Assessment of the planned increase of biomass use is important, especially as regards forest biomass. The net removal of CO₂ by LULUCF (Land Use, Land Use Change and Forestry) in Bulgaria has decreased by 57.1 per cent since 1988, the baseline year.³ The overall reduction of CO₂ emission removal by LULUCF was mainly due to lower removals by forests. The Plan projects an increase of the LULUCF factor through an increased role of forestry as a carbon sink, which is positive, but it is not clear how coherent it is with the projection of an increase in biomass to meet RES targets.

Recommendations for Bulgaria

Focus primarily on increasing energy efficiency, and secondarily on increasing the share of small renewable energy projects (especially thermal and small solar by households and utilisation of biodegradable waste).

For residential heating, introduce adequate regulations and support schemes to stimulate the deployment of solar heat panels, PVs with heat pumps, heat storage and zero-emissions district heating systems.

Increase the sustainability of biomass use through FSC certification of all state-owned forests, preservation of old-growth forests and implementation of more sustainable logging methods.



The Czech NECP underestimates the potential for development of renewable energy sources for electricity production, while it overestimates the potential of biomass, especially for heat production.

According to calculations proposed by the Ministry of Industry and Trade, most of the RES development between 2021 and 2030 is supposed to happen in the heating and cooling sector (71%), followed by very limited development in the electricity generation sector (16%) and the transport sector (13%).

Most of the planned development in the heating and cooling sector is supposed to be covered by burning biomass (the proposed figures for 2030 are 92 434,1 TJ for household biomass and 36 723,2 TJ for non-household biomass, while the current figures are 75 545 TJ and 26 631 TJ respectively). Furthermore, biomass is expected to be the second largest source for renewable electricity generation after photovoltaic power (biomass is set to account for 8 988,4 TJ in 2030, a 20% increase from 2016).⁴

However, the NECP authors didn't take into account the potential of biomass available within the Czech Republic. Non-household biomass energy production was estimated on the basis of energy companies' business plans without checking the available domestic biomass.

This is problematic, because of the sourcing of the biomass and emissions during transport. The Czech Renewable Energy Chamber has highlighted that in order to remain sustainable, the projected amount of non-household biomass used for heating and cooling needs to be cut. It argues that the goal for 2030 non-household biomass should be reduced to a maximum of 31 000 TJ, while noting that even this figure would exceed the volume of sustainably available biomass.

The Czech Republic is currently sourcing around 90% of its non-household biomass from dendromass. The NECP expects more than a one-

third increase in non-household biomass, which does not seem realistic, especially due to the shrinking of agricultural biomass yields due to prolonged droughts and the expected forest crisis due to the drying out of spruce monocultures amplified by the bark beetle calamity.⁵ Moreover, a new law on national parks from 2017 requires that parts of the national parks are left without active management and after the new qualification of the areas is worked out, the potential of logging will decrease as well.⁶

The plan does not outline in enough detail how the Czech Republic is going to source the necessary biomass until 2030. As it stands, the Czech Republic would either have to import biomass from abroad or resort to unsustainable sourcing of its own biomass in order to meet the projected demand. Instead of relying so heavily on biomass, the Czech NECP should rather focus more on the development of other renewable energy sources, especially wind and solar on roofs, which have the highest unrealized potential, in order to create a more balanced mix.

Recommendations for Czechia

Focus primarily on increasing energy efficiency, and secondarily on increasing the share of other renewable energy sources (especially wind and small solar) and decrease the reliance on biomass in the NECP.

Implement the FSC certificate in commercial forests in the Czech Republic to ensure sustainable forest management.

4

Ministry of Industry and Trade, "Draft of the National Energy and Climate Plan of the Czech Republic", December 2018, pp. 24-25.

5

For more information see: <https://www.radio.cz/en/section/business/czech-state-forest-boss-felled-amid-calamitous-bark-beetle-infestation>. As the current bark beetle calamity fades away, it can be expected that the available dendromass will shrink and its price will increase. Source: Czech Renewable Energy Chamber.

6

The new law is effective since 1.6.2017 and requires the national parks revise their zoning - part of the area must now be "natural zone" with no planned management: https://www.mzp.cz/cz/news__170531_ZOPK_plati

ESTONIA

The current land use, land-use change and forestry (LULUCF) sector has been trending towards a significant reduction of forest carbon capture since 2006-2007. This is due to continued over-logging, which has handicapped the potential for forest area carbon capture. The forests are under pressure to provide wood for energy and materials. The Estonian Environmental Agency calculated that logging of 9 - 10 Mm³ of wood is the maximum amount necessary to meet forest reference levels, but in 2018, the logging amount was reported to be 12.5 Mm³. Despite the ability of natural wetlands to store carbon and emissions from burning, peat use in energy is still considered positive in Estonia, as it is a local fuel source. In Oese, a new 51 km² peat extraction area and processing plant is planned, which would turn the bog into a considerable GHG emission source for an undetermined time period.

There are other planned biomass uses, which include fuel blending and production of methane in transportation. This overlogging will probably result in reduction of carbon capture and forest cultivation practices are destroying local forest biodiversity.

In addition, the agriculture sector, which provides food, feed and biomass, has started to use significant amounts of artificial fertilisers, which are not used optimally and result in nitrogen outflow. The problem is especially acute for Baltic Sea eutrophication, which is caused mainly by nitrogen flow, currently at roughly 25 000 tonnes per year in Estonia. The eutrophication is causing oxygen deprivation at great depths, where lethally poisonous Hydrogen sulfide (H₂S) has started to form, the rise of which is associated with the permian and other mass extinction events.

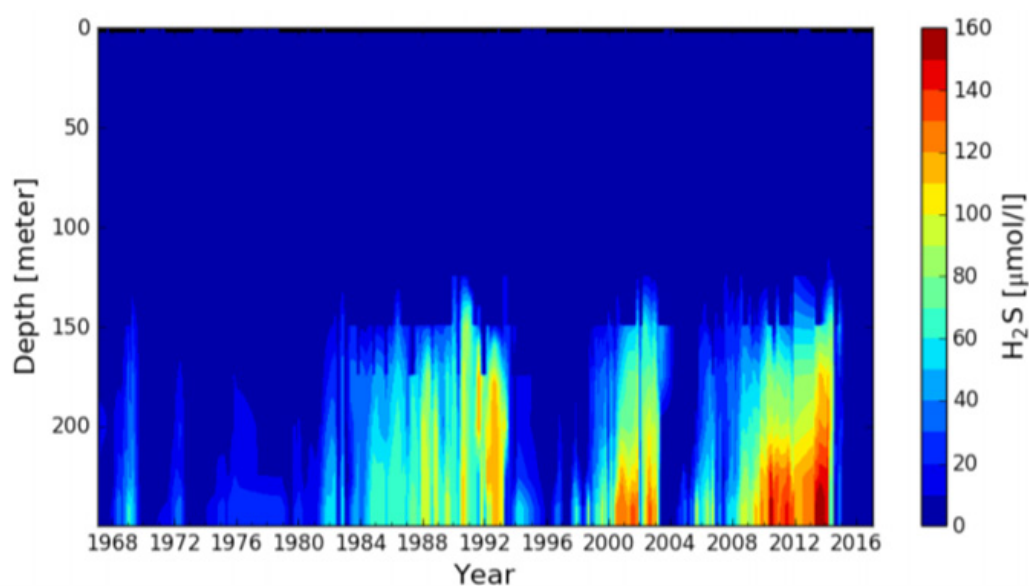
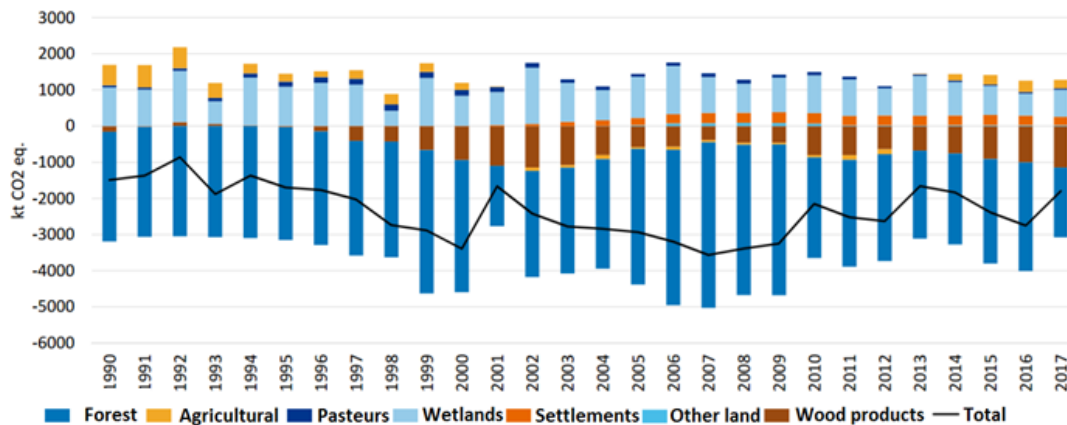


Figure 5. Concentration of hydrogen sulphide (H₂S) at Gotland Deep (BY15) in Eastern Gotland Basin from 1966-2016. Note that there are no H₂S data at this station prior to august 1966. The figure shows extremely high H₂S concentrations prior to the 2014 inflow, it does however not resolve the intermediary H₂S layers after the inflow, concentrations between 0-10 µmol/l is shown in dark blue.

On the other hand, nutrient rich sea might provide sustainable energetic biomass, which does not compete with forests or food growing and such activities should be supported



Source: https://www.smhi.se/polopoly_fs/1.114927!/RO_58.pdf

Recommendations for Estonia

Estonia's LULUCF sector could provide income for the country, if over-logging is stopped and wetland carbon capture maximised by rewetting. The use of nitrogen fertiliser in agriculture should be for time being severely limited to stop the mass extinction in the Baltic Sea and stabilize the situation. Algae and mollusc-growing in the Baltic Sea should be supported to absorb nutrients from the sea and to provide new sources of food and feed, as these might provide sustainable biomass and absorb nutrients.

HUNGARY

Currently approximately 80 per cent of Hungary's renewable energy output originates from solid biomass (see graph below). The draft Hungarian NECP, submitted to the Commission at the end of January 2019, mentions a few general biomass policy trends but does not yet detail policy provisions or calculations.

The NECP foresees 2.283 Mtoe of solid biomass for heating and 449 MW solid biomass-based electricity capacity, which according to our calculations, would require roughly 15 million tonnes of solid biomass per year (16,5 m³ per year). We estimate that only half of that amount is available, and we do not see the possibility of substantially increasing it. (As from the forestry sector, the yearly logging is half of that amount, but the firewood is only the quarter of that. The utilization of agricultural residues, industrial waste and biomass from energy plantations is limited, and impossible to fill that gap.)

This would represent an increase from 2.027 Mtoe and 300 MW respectively in 2015. Thus the NECP foresees a significant increase in biomass use both in heating and cooling and electricity generation. Both can be problematic, as in past years the IEA Hungary Review, OECD Review⁷ and numerous European reports⁸ have underlined the prevalence of and over-reliance on biomass within the renewable energy mix.⁹ Many recommended increasing non-depletable renewable shares instead.

Within total renewable thermal energy and cooling energy generation, district heating is planned to increase from 0.163 Mtoe per year in 2015 to 0.451 Mtoe by 2030. The NECP will "encourage the construction of new biomass and geothermal district heating generation capacities with high-intensity non-refundable aid after the 2014–2020 programming period as well". Questions remain about the source and sustainability of this extra biomass, which would require more of the biodegradable

part of municipal waste ('green waste') input than is expected to increase with the required collection from households in 2023. According to Energiaklub & Wuppertal Institute calculations¹⁰, the geothermal share of district heating could be double what was originally planned.

At the same time, household biomass for heating-cooling (meaning mostly firewood, a significant amount of which was acquired illegally or not sustainably in wet or low-quality conditions¹¹) is to decrease from 1.765 Mtoe in 2015 to 1.611 Mtoe by 2020 and maintain this level until 2030. This planned decrease is welcome, but it's also a necessity, as the former biomass reports contained illegal or unsustainable household biomass use as well, due to an earlier modification of the statistical methodology in 2017 approved by Eurostat. (According to the REDII only those biomass can be counted as renewable which meets the sustainability criteria – therefore it is likely that the calculation of residential biomass use will be based on the forestry statistics.)

Nevertheless, it is unclear how the NECP calculates this 1.611 Mtoe need for household biomass heating and whether it factored in all potential energy efficiency measures in boilers and boiler changes (from lignite or mixed-heating to wood). It is a valid question, as the NECP Annex 1 mentions phasing out solid fossil i.e. lignite in household heating by 2030. The draft NECP mentions household biomass only in a few sentences: "Planning assigns a priority to improving the efficiency of boilers and other combustion installations using biomass, in parallel with improving the energy performance of buildings. The use of solid biomass for individual heating is also a social issue, as a social fuel wood programme is launched each year. Owing to the complexity of the issue, the detailed planning of measures will be carried out in 2019."

7

Energy Policies of IEA Countries: Hungary 2017 Review, <https://webstore.iea.org/energy-policies-of-iea-countries-hungary-2017-review>

OECD Environmental Performance Review Hungary 2018 report: <https://books.google.hu/books?isbn=9264298614>

8

p.eg. EEA: Renewable Energy in Europe - 2018 "In Hungary, Latvia and Slovakia, the statistical conventions in place resulted in slight increases in primary energy consumption due to the prevalence of biomass-based renewable energy in these countries" <https://www.eea.europa.eu/publications/renewable-energy-in-europe-2018>

9

This is problematic due to:
1. unsustainable harvesting combined with statistical issues - Hungary only meets its RES target due to biomass and manipulation of statistics <https://www.levego.hu/en/related-documents/hungary-meets-its-renewable-obligations-by-burning-stolen-wood-and-waste-in-households/> 2. over-reliance on biomass as a favoured type of renewable energy discourages the development of other RE types - governments argue that there is no need to develop them because the targets have anyway been met, which works against a healthy, secure and diverse energy mix.

10

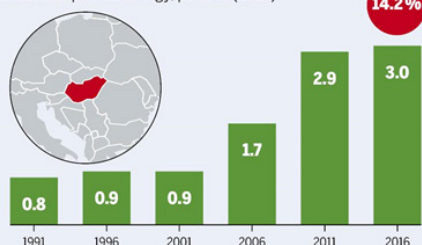
<https://www.energiaklub.hu/files/study/ASES-ENG.pdf>

11

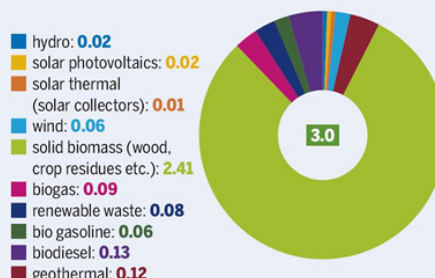
About the manipulation of biomass statistics by counting also unsustainable biomass: <https://www.levego.hu/en/related-documents/hungary-meets-its-renewable-obligations-by-burning-stolen-wood-and-waste-in-households/>

HUNGARY - CONSERVATIVELY MOVING

Gross domestic renewable energy consumption, million tonnes of oil equivalent (Mtoe), and share of renewables in gross final consumption of energy, percent (2016)



Renewable energy consumption by source, 2016, million tonnes of oil equivalent (Mtoe)



© ENERGY ATLAS 2018 / EUROSTAT

Recommendations for Hungary

A comprehensive biomass feasibility study with biomass sustainability criteria is required to prove whether there is really sufficient biomass available for 2.283 Mtoe solid biomass for heating and 449 MW solid biomass-based electricity capacity by 2030. The survey should also consider whether there are more sustainable alternatives and must take into consideration the quality and quantity of biomass needed by the agricultural sector for soil regeneration, feed and other non-energy purposes. There are some data available¹² to do this before the finalisation of the NECP, after which the biomass objectives and measures must be adjusted.

LATVIA

The share of wood fuel in the consumption of RES was 74.0 per cent in 2017.¹³ Biomass (solid, gaseous, and liquid) was the dominating fuel in primary energy consumption (excluding electricity) in Latvia in 2017. The share of biomass fuel in total primary energy consumption was 37.9 per cent and the share of biomass fuel consumption in total final consumption of fuel was 34.3 per cent.¹⁴

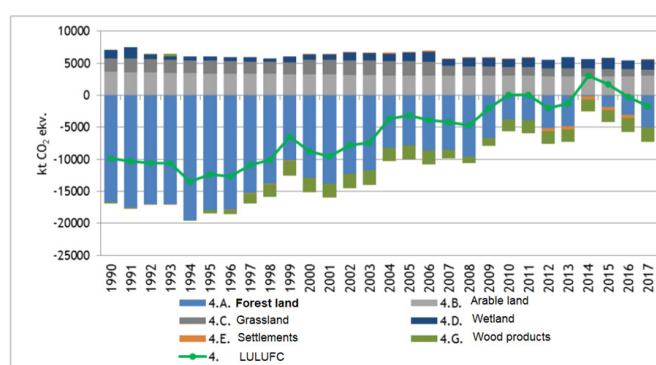
It is estimated in the draft NECP that **the share of solid biomass in total primary energy consumption will increase by about three per cent by 2030,¹⁵ and the share of solid biomass in final energy consumption will increase by 13.3 per cent by 2030** (compared to 2015). However, in order to fulfil the Latvia's contribution to its renewables targets, the country has adopted measures to promote the use of biomass in the production of electricity and heat¹⁶, **meaning that the total share of solid biomass might be higher.** Between 2007 and 2016, the share of wood fuel consumed in the energy sector for the production of electricity and heat increased by 18.6 per cent, reaching 33.1 per cent of total consumption in the transformation sector in 2016.¹⁷

The total consumption of wood fuel (firewood, wood residues, woodchips, wood briquettes, wood pellets) has increased by 9.3 per cent in ten years.¹⁸ Logging has not changed significantly in ten years, and increased demand for wood

is satisfied by using forest residues. In ten years total consumption of forest residues has increased 1.4 times and total consumption of wood chips has increased 3.6 times.¹⁹ **Increased demand for wood fuel and low purchase price will most likely result in the use of lower-quality forest residues.** Combustion of high moisture woodfuel decreases calorific value and increases emissions.

Exports of wood and its products was the most significant export sector in 2017, comprising 20 percent of total export value. About 75 per cent of forestry sector output is exported and the share of exported woodfuel in total export of wood and its products was 13 per cent in 2017.²⁰ **Growing consumption of biomass in other countries might influence forest resource demand in Latvia.**

According to the 2019 GHG inventory, in the land use, land-use change, and forestry (LULUCF) sector in 2017, CO₂ removals overall were higher than the amount of GHG produced in the entire sector, however total CO₂ removal declined by 82.6 per cent in the period from 1990 to 2017. The reduction of CO₂ removal is related to increased logging in forest lands (more than twofold), a larger amount of deadwood, and a smaller increase of living biomass in forest lands.²¹ **The harvest rate is causing a significant reduction in CO₂ capture in Latvia.**



Recommendations for Latvia

Ensure sustainable land management that reduces logging in ecosystems with high biodiversity values and supports the use of abandoned farmland. Support the use of sustainably-sourced wood fuel (in 2019 ~33 per cent of forests in Latvia are certified by the FSC^{23, 24}). Support only the most effective technologies for the preparation and use of biomass, including lower quality forest residues.

13
Central Statistical Bureau of Latvia (2018), Press Release

14
Draft NECP (2018), p.46

15
Draft NECP (2018), p.100

16
Draft NECP (2018), p.46

17
Central Statistical Bureau of Latvia (2017), Press Release

18
Central Statistical Bureau of Latvia (2017), Press Release

19
Central Statistical Bureau of Latvia, Database

20
Ministry of Agriculture, Export of forestry products

21
Latvian Environment, Geology and Meteorology Centre (2019), p.20, Inventory of GHG

22
Latvian Environment, Geology and Meteorology Centre (2019), p.20, Inventory of GHG

23
Forest Stewardship Council (May, 2019), Facts and Figures

24
Ministry of Agriculture, Facts and Figures

POLAND

Poland has long over-relied on co-firing coal and biomass for renewable energy production, with biomass accounting for roughly 70 per cent of total renewable energy.²⁵ The draft NECP envisages further increasing the role of biomass in energy production.

The NECP predicts that **solid biomass consumption** will increase from 4.8 mtoe in 2015 to 6.3 mtoe in 2030 in the heating sector, and from 0.7 mtoe in 2015 to 1 mtoe in 2030 in the electricity generation sector. **CO₂ emissions from biomass burning** are expected to increase from 34.7 million tonnes in 2015 to 51.6 million tonnes in 2030 (and continue to rise to 55.1 million tonnes in 2040).²⁶ During the same period, land use, land-use change, and forestry (**LULUCF**) **removals** are set to decrease from -28.8 million tonnes in 2015 to -13.7 million tonnes of CO₂ in 2030.²⁷ The draft NECP explicitly admits that there is a link between those trends.²⁸

The draft NECP does address the question of biomass production competing with food production for land resources: it states that 13 per cent of Poland's total biomass potential can be used for energy production without risking soil degradation, a decrease in food supply or non-compliance with the CAP environmental rules.²⁹ However, it does not say explicitly whether the volume of biomass consumption envisaged in the NECP falls below this threshold. This is far from certain as Annex 2 to the NECP warns that because of limited biomass resources, mechanisms will need to be implemented to ensure biomass is only used in the most energy-efficient units,³⁰ in order to reduce overall consumption.

The NECP does not address at all the sustainability of forest biomass production. This is particularly worrying given Poland's generalised and serious problems with the sustainability of forest management.³¹ While those problems remain unresolved, adopting an NECP that provides for an increase in the demand for biomass will inevitably lead to more unsustainable timber production in a country

which is already experiencing serious degradation of its forest ecosystems.

The draft NECP seems to view biomass burning as the only practicable way of increasing the share of renewables, especially in the heating sector, while overlooking the role other kinds of renewables could play.³² With regards to heat production in the residential sector, the NECP projects that biomass boilers will remain the dominant source of renewable heat, with solar panels and heat pumps accounting for a small addition to the mix,³³ despite the questionable climate effects,³⁴ that heat pumps with PV and solar panels could be economically viable alternatives, and that burning more biomass in residential buildings may undermine the government's air quality efforts.

Recommendations for Poland

Poland should explore other ways to increase the share of renewable energy sources. For electricity generation, consider removing regulatory barriers to the development of onshore wind. For residential heating, introduce adequate regulations and support schemes to stimulate the deployment of solar heat panels, PVs with heat pumps, heat storage and zero-emissions district heating systems.

25: GUS, *Energia ze źródeł odnawialnych w 2017 r.*, p. 1.

26: See Table 23 on p. 24 in Annex 2 to the draft NECP.

27: See Table 23 on p. 22 in Annex 2 to the draft NECP.

28: See the draft NECP on p. 22.

29: See the draft NECP on p. 23.

30: See Annex 2 to the draft NECP, p. 29.

31: The ECJ ruled in 2018 that Poland violated EU laws by stepping up logging in the Białowieża Forest, but despite the verdict, new

plans to increase logging are being drafted. The situation is similar in other major forest complexes in Poland, including the Carpathian Forest in southern Poland and the Beech Woods in western Poland.

The Commission observes in its 2019 Environmental Implementation Review that Poland has not managed to reconcile its forest management with Natura 2000 conservation objectives, making the point that the promotion of fast-growing species such as pine or spruce may be the reason why the condition of the forest habitat and its species does not seem to be improving. The Commission also observes that Poland's national legislation on forests effectively exempts forest management activities from the provisions of the Birds and Habitats Directives (p. 13).

32: See Annex 2 to the draft NECP, p. 29.

33: Cf. Table 33 on p. 33 in Annex 2 to the draft NECP.

34: According to the draft Polish NECP, CO₂ emissions from biomass are going to increase by nearly 11 million tonnes between 2020 and 2030, while LULUCF removals are expected to decline by more than 8 million tonnes of CO₂ equivalent in the same period. See Table 21 on p. 22 and Table 23 on p. 24 in Annex 2 to the draft NECP.



The unsustainable use of biomass remains a concern in certain regions of Slovakia where high-quality wood is cut and burned for energy purposes.³⁵ The Slovak Environment agency concluded that between 1994 and 2011, logging exceeded the bearable amount.³⁶ The share of solid biomass was 45 per cent of total renewables in primary energy supply in 2017.³⁷ Logging grew by at least 75 per cent between 1990 and 2015.^{38, 39} Slovakia lost almost 6 per cent of forest cover between 2001 and 2014.⁴⁰ Moreover, heating with low-efficiency combustion equipment for burning solid fuels, including biomass, contributes the most to high concentrations of particulate matter.⁴¹

The draft Slovak NECP is underdeveloped. For example, the estimated trajectories on bioenergy demand and specific measures on promoting the use of energy from biomass will be completed later in the final version. The draft NECP mentions that reducing the share of coal in heating to the benefit of renewables will improve the sustainability and security of heat supplies, but it does not sufficiently connect it to energy efficiency and there are no signs of plans to set up regional energy planning.⁴² It also underlines the importance of district heating as creating good technical preconditions for the use of biomass, biomethane and geothermal energy. In recent years, plants using combined heat and power technology have been rebuilding boilers to burn biomass with coal and building new boilers to burn biomass, and this trend will continue. There are plans to increase the installed capacity of solid biomass utilities from 110 MW (2020) to 200 MW (2030) and disproportionately increase the gross amount of electricity produced from 990 GWh (2020) to 1100 GWh (2030). This will make the over-cutting of forests and other sources of biomass even worse.

An absence of sustainability criteria has resulted in spending a huge amount of EU funding on building large-scale wood-based heat and power plants, both communal and industrial. But the Slovak government adopted criteria

for sustainable use of biomass in EU funds in 2017 and the RES support scheme in 2018 (More details in Annex I).⁴³ Fortunately, Slovakia plans to develop and accept sustainability criteria for all renewable energy production sources by 2020.⁴⁴ According to the Strategy on Environmental Policy, they will respect regional potential, economic advantage, impact on the energy system, impact on protected areas, protected species of plants and animals and the opinion of the public concerned, municipalities and regions. The NECP does not reflect the plans yet and criteria are mentioned only for biofuels and the 'sustainable use of biomass' as part of an optimal energy mix only in one sentence in the research section of the draft.

In addition, the Supreme Audit Office of the Slovak Republic concluded in a recent report that there is an uneconomical use of property in the administration of the state-owned enterprise Lesy SR, the non-performance of duties with professional care and in accordance with the interests of state enterprises, breaching several acts.⁴⁵

35
European environmental agency
(2018), The EU Environmental
Implementation Review: Country
Report – Slovakia.

36
Slovak Environment agency
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Recommendations for Slovakia

Slovakia should develop its NECP in the direction already set by the country's strategic documents. The most important steps are to implement the objectives of the Strategy on Environmental Policy of the Slovak Republic until 2030:⁴⁶

- *Develop and accept sustainability criteria for all renewable energy production sources by 2020; and*
- *Prohibit logging in non-interference zones and prioritise environmentally friendly land management in areas with active management. The total value of forest ecosystem services will not decrease. Public and institutional control of logging will be increased.*

Moreover, capacities for regional energy policy need to be systematically built to enable regions to decrease their energy demand and secure sustainable production of various available renewable energy sources for local optimised consumption.

Finally, Slovakia should implement the Supreme Audit Office's recommendations to the state-owned forest company to:⁴⁷

- *review the dominance of economics over long-term sustainability of forests;*
- *set up a Forest Restoration Fund and increase the very low rate (10-14 per cent) of revenues spent on (re)forestation; and*
- *increase transparency and avoid unthrift i.e. selling wood below market prices to private companies.*

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ANNEX

Sustainability criteria for the use of wood biomass for energy

Countries with existing sustainability criteria or certification schemes are well placed to advocate for solutions that are functional and effective.⁴⁸ For example, Slovakia adopted criteria for the sustainable energy use of wood biomass in two EU-funded Operational Programmes in 2016.⁴⁹ Moreover, Slovakia also restricted subsidies for biomass only to the combustion of wood from energy covers and waste from wood-processing industries.^{50, 51}

Sustainability criteria for the energy use of wood biomass as approved in Slovakia

All three criteria listed below have the character of exclusion criteria i.e. for the project to be considered sustainable, all three criteria must be met. Failure to meet one of the criteria is a reason for project refusal or return of the subsidy during the implementation phase.

A body from the relevant operational programme will carry out a check on the fulfilment of the criteria.

Criterion 1: proof of origin of the feedstock

This criterion is to ensure more efficient management of timber in a sustainable way i.e. optimal use of forested and non-forested land, as well as solid-wood-based residues, which are the most important source of wood biomass for energy generation in Slovakia. This criterion is to prevent fuel production and generation of heat and electricity from wood, whose technical parameters allow its use or processing with a higher added value. At the same time, it is to prevent wood biomass from non-forested land from being exploited in conflict with the management of protected areas and Natura 2000 sites.

Criterion 2: transportation and distribution

This criterion is to contribute to ensuring the sustainability of wood biomass potential for energy use, reducing greenhouse gas emissions, increasing energy security and self-sufficiency

(especially in less developed regions) and reducing dependence on fossil fuel consumption. This criterion also attempts to increase the transparency of wood biomass flows. Due to the fact that the prevalence of demand for biomass availability may arise in some regions, the sustainability of wood biomass for energy generation is ensured by determining the transport distance i.e. direct distance from the place of origin to the place of consumption, as follows:

(A) The transport distance for the construction of new energy facilities for the use of wood biomass is 50 kilometres within the definition of the defined area.

(B) The transport distance for the reconstruction or upgrading of existing energy facilities for the use of wood biomass is 100 kilometres within the defined area.

Besides providing a regional approach to the use of wood biomass, this approach is also to minimise greenhouse gas production by limiting transport of wood biomass as well as replacing obsolete fossil fuel combustion plants like coal with energy efficient wood-based boilers located in regions with an insufficient availability of wood biomass.

Criterion 3: effectiveness of wood biomass energy conversion

This criterion is to increase the efficiency of the use of wood biomass for energy generation, including the reduction of greenhouse gas production and other pollutants arising from the conversion of energy.

The minimal guaranteed energy conversion efficiency values arise from Art. 13, point 6 of Directive 2009/28/EC on the promotion of energy from RES

Another criterion was proposed by several Slovak experts, mostly from civil society organisations, but was not included due to the concerns of managing authorities related to the pace of spending related EU funds.⁵²

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Other recommended sustainability criteria for the energy use of wood biomass

Criterion 4: promoting the use of wood biomass for materials

The criterion is to increase the use of wood biomass to produce wood products, which increases the forest reference level and improves a Member State's position in Land Use, Land-Use Change and Forestry (LULUCF) CO₂ emissions market. The wood used for energy will be discounted in the LULUCF sector, and a need to buy CO₂ quota in the LULUCF sector arises. Wood products will be discounted over long periods: 35 years for sawn wood, 25 years for wood panels and 2 years for paper.

The values arise from Directive 2018/841/EC, Art. 9: "Accounting for harvested wood products."

Criterion 5: minimum requirements for the energy efficiency of buildings and consumption of heating from bioenergy facility

Each publicly funded project to replace fuel or upgrade an energy installation based on solid biomass will have to be submitted together with a list of all the buildings that are using heat and/or hot water from the energy installation and their energy certificates.

In case buildings do not reach energy efficiency Class B in its energy consumption for heating or there is no energy certificate, the application submitted will be either refused or the final beneficiary of the non-repayable financial assistance submits a binding declaration that Class B will be reached in a set time or the applicant supplies the required energy certificates until a certain period of time.

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