Research on the Availability of Woody Biomass

Biomass currently is the main source of renewable energy in the Netherlands. Plans show that, by 2020, the amount of biomass used to replace fossil resources will have doubled, compared to 2010 levels. For other European countries, biomass is also an important source of renewable energy. And the plans for 2050 are even more ambitious. It is particularly unclear whether or not, in the future, sufficient amounts of biomass could be produced in a sustainable manner – i.e. without negative impacts on climate, biodiversity and food supply.

The possibilities for the Netherlands to use more biomass in the future, furthermore, not only depend on potential global production levels but also on the demand in other countries. If biomass becomes profitable and thus an attractive renewable resource for use in the Netherlands, this will also be true for other countries, causing a large demand.

Professor Martijn Katan Substantionates Whole Tree Claim

2019-11-29-mkatan-onderbouwing-nrc-artikel-kolencentrales-gaan-

RECENT

2019-11-29-mkatan-onderbouwing-nrc-artikel-kolencentrales-gaan-bomen-stoken-dutch.pdf

2019-11 \\ Professor Martijn Katan

2019-11-25-ngos-letter-to-dutch-government-biomass-is-not-a-lifeline-for-coal-english.pdf

2019-11 \\ 37 NGO's

2019-11-22-edsp-eco-pro-biomass-lobbyfacts-research-part-3-scientists-martin-junginger-english.pdf

2019-11 \\ EDSP ECO

2019-11-12-nrdc-burnout-eu-clean-energy-policies-lead-forest-destruction-english.pdf

2019-11 \\ NRDC

2019-10-09-ngos-letter-to-the-danish-parliament-and-climate-minister-regarding-forest-biomass-english.pdf

2019-10 \\ Multiple NGO's

bomen-stoken-dutch.pdf

This substantiation, written by Professor Martijn B. Katan, was originally published in NRC Handelsblad, a major Dutch National newspaper and provides evidence that wood pellets used for bioenergy consist mostly of whole trees. He explains how subsidies for woody biomass has created a huge rise in demand for wood and has driven up the prices, whereas had these subsidies not been allowed, the burning of trees for energy would not have been economically viable and the trees would be left standing, capturing CO2. In line with this he observes how the demand for wood chips rose and fell as subsidies came in and went. And indeed, at the end of 2018 export volumes from the U.S. to the Netherlands, the fourth largest importer of U.S. wood pellets with 2.3% of market share, more than tripled as the country returned to co-firing at the end of 2018 (https://forisk.com/blog/2019/11/13/north-american-wood-pellet-exports-q4-2019-update/). This substantiation which was added to the the original article is supplemented with sources and his calculation that supports his claim that one would need forests five times the size of Estonia to be able to supply the three coal plants in the Netherlands with enough wood if indeed, as some claim, only waste wood was used as fuel.

"The largest producer in the world, the American Enviva, reports every quarter what their pellets are made of. On average, that is four fifth trees and one fifth waste. Of all trees, half is spruce and the rest is hardwood, mainly oak."

"A report from the University of Montana showed that in the forested northwestern states of the U.S. hardly any wood waste remains. It is all used for paper and cardboard, for chipboard or as fuel in the sawmills."

"Pellet manufacturers demand the highest price for what wood waste is left, so for chipboard (etc.) new trees are now being cut down. Even the production of biomass from waste therefore indirectly leads to the removal of more forest."

"Satellite images show the forests of Estonia are rapidly declining, eyewitnesses tell about old-growth forests disappearing and recently 35 forest protection organizations from Estonia and the US wrote a well-documented letter begging Wiebes and the House of Representatives to put an end to this. (https://www.biomassmurder.org/docs/2019-11-25-ngos-letter-to-dutch-government-biomass-is-not-a-lifeline-for-coal-english.pdf)

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2019-10-02-biofuelwatch-estonia-logging-and-pellet-production-english.pdf

2019-10 \\ BioFuelWatch

2019-08-09-easac-serious-mismatches-continue-between-science-and-policy-in-forest-bioenergy-english.pdf

2019-08 \\ EASAC

2019-08-00-eu-biomass-legal-case-main-arguments-english.pdf

2019-08 \\ EUBiomassLegalCase

2019-06-11-frontiers-research-proforestation-mitigates-climate-change-and-serves-the-greatest-good-english.pdf

2019-06 \\ Frontiers Research

2019-05-14-un-environment-the-emissions-gap-report-2017-executive-summary-english.pdf

2019-05 \\ United Nations

2019-05-14-un-environment-the-emissions-gap-report-2017-executive-summary-english.pdf

2019-05 \\ United Nations

2019-05-00-probos-beschikbaarheid-van-houtige-biomassa-uit-bos-landschap-stedelijk-groen-dutch.pdf

2019-05 \\ Probos

2019-04-00-environmentalpaper-the-reputational-and-financial-risks-of-investing-in-forest-biomass-energy-english.pdf

37 NGO's Send Letter to the Dutch Government on Biomass

2019-11-25-ngos-letter-to-dutch-government-biomass-is-not-a-lifeline-for-coal-english.pdf

In this letter 37 NGO's urge the Dutch House of Representatives to ensure that no further subsidies will be granted for burning biomass either in coal power stations or in dedicated biomass plants and to redirect the biomass subsidies already granted towards non-emissive renewable energy. Despite the fact that 800 scientists, many different studies (and counting) and EASAC having concluded that cutting down trees to burn in power stations is not compatible with the need to try and stabilise the climate, the EU hasn't budged. Most of the NGO's that cosigned the letter are from Estonia and the (southwestern) U.S. which are two areas whose forests have been heavily effected by the subsidies granted for the burning of woody biomass in the EU.

"The already permitted level of cofiring in the power stations in Eemshaven, Amercentrale and the two on the Maasvlakte (Rotterdam area) translates into the burning of approximately 3.5 million tonnes of pellets a year. Each ton of pellets will require at least twice that amount in green wood. The additional amount of wood which is to be burned in dedicated biomass plants already granted subsidies is additional, uncapped, and no official figures are available about it."

READ MORE

Paid Pro-Biomass LobbyFacts Research - The Scientists

2019-11-22-edsp-eco-pro-biomass-lobbyfacts-research-part-3-scientists-martin-junginger-english.pdf

This report describes the paid pro-biomass lobbying activities of scientists in the Netherlands and is part of an extensive study on the paid pro-biomass lobbyfacts in the Netherlands. Researchers, professors and the directors of universities, (former) members of the House of Representatives, ministers and officials from the government are paid directly or indirectly through biomass projects that are allocated by the companies who benefit from burning woody biomass through subsidies paid by the government and the European Union. This specific article focuses on the Copernicus Institute of Utrecht University. Other institutes are discussed in following chapters.

2019-04 \\ Environmental Papers

2019-04-00-ipcc-report-global-warming-chapter-2-mitigation-pathways-compatible-with-1-5-degreas-in-the-context-of-sustainable-development-english.pdf

2019-04 \\ IPCC

2019-03-25-wetenschappelijkbureaugroenlinks-maak-een-einde-aan-de-co2-neutraliteit-van-houtstook-dutch.pdf

2019-03 \\ Scientific Thinktank GL

2019-03-04-vox-europes-renewable-energy-policy-is-built-on-burning-american-trees-english.pdf

2019-03 \\ VOX Research

2019-03-04-euractiv-eu-dragged-to-court-for-backing-forest-biomass-as-renewable-energy-english.pdf

2019-03 \\ Euractive

2019-02-20-gnmf-aanbevelingen-hoogwaardige-inzet-houtige-biomassa-dutch.pdf

2019-02 \\ GNMF

2019-02-10-easac-forest-bioenergy-carbon-capture-and-storage-and-carbon-dioxide-removal-english.pdf

2019-02 \\ EASAC

2019-02-00-european-commission-brief-on-biomass-for-

"...At the end of 2012, Dogwood Alliance published an extensive report that showed that the RWE Essent uses whole trees to annually produce the 750,000 tonnes of wood pellets at the wood pellet factory in Georgia (America), intended for the biomass plants in Europe."

"According to the 2013 SOMO report, the Netherlands has subsequently become one of the world's largest consumers of solid biomass for electricity and the center for the import of biomass for supplying the rest of North-West Europe. The report shows that the vast majority - approximately 80% - of the biomass used for electricity production is imported into the Netherlands. The most important suppliers of biomass to the Netherlands in 2011 were the US (21%), Canada (18%), Russia and the Baltic States (11%), Southern Europe (10%), Western Europe (excluding the Netherlands - 5%)), Oceania (2%), South Africa (1%) and other countries (11%, including small shipments from Brazil and Ghana). The largest consumers of solid biomass for electricity production in the Netherlands are the electricity companies RWE / Essent (727,073 tons per year), GDF Suez (452,168 t / y), Eneco (319,000 t / y), E.ON (200,000 t / y), EPZ (191,000 t / y) and Vattenfall / Nuon (56,664 t / y).

"Mid-2017, NRDC and Dogwood Alliance published an even more extensive study in which they voiced a damning judgment about the Sustainable Biomass Program (SBP) certification program of RWE Essent. The study also cited a recent report from the European Commission that validated NGOs' concerns and concluded that current EU imports of wood pellets from the Southeastern United States came from whole trees and other large-sized wood . The report found that current E.U. imports from the southeast are dominated by wood pellets based on wood pulp (about 60 to 75 percent, mostly softwood) but also hardwood wood pulp."

"The European Commission's report also concluded that most of the wood that was checked did not meet the criteria to ensure a reduction in CO2 emissions. The same report confirmed that the increasing timber harvest causes direct and immediate losses of carbon stocks compared to the baseline and that additional harvests for wood pellets would degrade carbon stocks in the short term and that the long-term effects were uncertain."

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EU Clean Energy Policies Lead Forest Destruction

2019-11-12-nrdc-burnout-eu-clean-energy-policies-lead-forest-destruction-english.pdf

energy-in-the-european-union-english.pdf

2019-02 \\ EU Commission

2019-02-06-shareaction-investor-report-the-biomass-blind-spot-english.pdf

2019-02 \\ ShareAction

ATTENTION!

We are analyzing reports and creating & posting new summaries every day. This is time consuming work but we will try to deliver multiple summaries per day. We are currently processing reports from 2019 and will work our way back into the hundreds of official research reports commissioned the last decade.

This report is based on research from the consulting firm Trinomics. It provides the most comprehensive and up-to-date assessment of government subsidies and other forms of financial support offered to biomass energy producers in the European Union. We focus on the 15 E.U. member states most heavily reliant on bioenergy and cover the period from 2015 to 2018. The Technical Appendix contains Trinomics' full report, including a detailed description of methods, analyses, and results.

"...The [Dutch] reliance on wood pellets imported from Russia, the Baltics and, increasingly, North America threatens ecologically sensitive forests in regions like the U.S. Southeast."

READ MORE

NGOs Letter to Danish Parliament Regarding Forest Biomass

2019-10-09-ngos-letter-to-the-danish-parliament-and-climate-minister-regarding-forest-biomass-english.pdf

In this letter to the Danish parliament, international NGO's, representing millions of activists in the United States, Estonia, Lithuania, the U.K., and Germany, urge government 1) to impose a levy on biomass, 2) to phase out the subsidy for burning biomass from wood, and 3) to determine a date for phasing out biomass as soon as possible. All this in order to avoid extensive harm to the world's forests and the acceleration of climate change that will be caused by treating biomass as a green energy resource. Nearly 70% of Denmark's renewable energy supply (2017) is met by burning woody biomass, as a result of which 30% more carbon is being emitted than is required to report. On top of that, TV2 investigation series made it apparent that voluntary sustainability standards agreed upon by the biomass industry are falling short of genuinely protecting forests, climate, and communities.

"Enviva, a supplier to Ørsted, admits that the majority of the wood it uses for pellets is hardwood. In that region, hardwood is predominantly found in natural forests, not in plantations."

READ MORE

Estonia Logging and Pellet Production

2019-10-02-biofuelwatch-estonia-logging-and-pellet-production-english.pdf

This report from Biofuelwatch (august 2019) investigates logging sites and practices in Estonia, in particular the ones associated with Graanul Invest, the 2nd biggest pellet producer, after Enviva, in the world. As the demand for wood pellets is on a sharp increase due to the existing subsidies for burning wood for energy, signs of over-exploitation of Estonia's forests are becoming more numerous and alarming as logging activities are pushed into protected areas.

"According to Estonian Fund for Nature, statistics show that at least half of all the wood logged, and likely more, is burned for bioenergy, most of it within Estonia, but increasing amounts as pellets burned in other countries."

"In addition to the domestic biomass use, pellet exports have been increasing steeply in recent years, from around 400,000 tonnes in 2010 to around 1.3 million tonnes in 2017. [...] An anticipated steep increase in pellet demand for power stations in the Netherlands, as well as new demand in several other European countries, are likely to accelerate the increase in pellet production and exports."

"[Observed] clearcutting and selective cutting in an oldgrowth forest inside a Natura 2000 Special Protection Area are a strong indication of how the serious over-exploitation of Estonia's forests is pushing logging activities even into protected areas in terrain where logging is more difficult and costly."

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Serious Mismatches Between Science & Bioenergy Policy

2019-08-09-easac-serious-mismatches-continue-between-science-and-policy-in-forest-bioenergy-english.pdf

This report considers how current policy might be reformed to reduce negative impacts on climate and argue for a more realistic science-based assessment of the potential of forest bioenergy in substituting for fossil fuels. Since the length of time atmospheric concentrations of CO_2 increase is highly dependent on the feedstocks, the authors argue for regulations to explicitly require these to be sources with short payback period. Furthermore, they re-emphasize the reasons why current policy is achieving the opposite of that intended, and why the urgency of its revision has increased following the conclusion of the Paris Agreement.

"In recent years, the production of wood pellets using forest biomass as feedstock has increased, with industry consultants (Hawkins Wright, 2019)

estimating that global industrial pellet production will reach 24 million metric tonnes (Mt) in 2019 (equivalent to a feedstock of ~50 million m3 of wood. […] [G]lobal generating capacity has risen from 52,146 MW in 2009 to 95,687 MW in 2018, with the most rapid increases occurring (over the same period) in the EU (from 15,912 to 24,081 MW) and Asia (from 14,140 to 34,845 MW)"

"Among the pellets produced globally, over 10 million tonnes are traded internationally"

"The revised directive (REDII) continues to classify biomass in the same way as solar, wind and other categories of renewable energy. Subsidies continue and other countries (including some of the 29 members of the 'Powering Beyond Coal Alliance') see substituting coal by biomass as a step towards mitigating climate change, thus leading to further expansion."

"Even though some forest carbon stocks have been increasing in Europe and parts of the United States, the Global Forest Resources Assessment (FRA, 2015) estimated that forest carbon stocks globally decreased by 0.22 gigatonnes annually from 2011 to 2015."

"Recent market surveys forecast rapid growth in pellet demand in South Korea and Japan founded on the ability under UNFCCC accounting rules to rate the related emissions as zero.

"The essential reform required for existing and new operators is to limit feedstocks to those that have payback periods compatible with the Paris Agreement targets. As already pointed out, these may include the residues of traditional forest management, or forests subject to dieback or high fire risk. This is a challenge for regulators since the EU's own analyses found that the amounts of residues available are insufficient (or already used in the forestry supply chain) to support the increased demand from large pellet plants, and that stemwood from trees was the dominant source of biomass for US pellet plants."

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EU Biomass Legal Case Main Arguments

2019-08-00-eu-biomass-legal-case-main-arguments-english.pdf

This legal document contains the main arguments in the EU Biomass Legal Case where the applicants seek annulment of the inclusion of "forest biomass" – essentially

trees, including, stems, stumps, branches and bark – as a renewable fuel within the
Renewable Energy Directive (recast) 2018.

"...In January 2018, EASAC wrote directly to the President of the European Commission to warn, "The legal mandate to record forest biomass-fired energy as contributing to the EU's renewable energy targets has had the perverse effect of creating a demand for trees to be felled in Europe or elsewhere in order to burn them for energy..."

"...As observed in the 2014 European Commission report "Environmental Implications of Increased Reliance of the EU on Biomass from the South East US," biomass demand is expected to drive natural forest conversion and to contribute to loss of natural forests – and there are no laws prohibiting this: "Over the last 50 years, demand for fibre has contributed to a very significant increase in the area of plantation pine coinciding with a loss of natural forests. There are no laws that limit the conversion of natural forests to plantations..."

*"...In 2016, total bioenergy (solid biomass, liquid biofuels, biogas, biogenic waste and
charcoal) constituted almost 65% of the energy inputs in the EU that constitute "renewable" energy. Solid biomass (wood, agricultural residues, and black liquor), increased 140% over the same period and constituted 45% of renewable
energy inputs in 2016..."*

*"A report published by the EC's advisory Joint Research Centre notes "Energy accounts for almost half (48%) of total reported uses of woody biomass on EU-28
level... Bearing in mind that energy uses are underreported, the energy share of woody biomass uses should reasonably be even higher. Indeed, targets for renewable energy set by the EU have resulted in a surge in the consumption of woody biomass."*

*"The wood burned for heat and power includes imported wood pellets. Data from
Bioenergy Europe show a large percentage increase in the use of wood pellets between 2016 and 2017"*

*"According to data from the US wood pellet industry, manufacturing one tonne of
dried wood pellets requires about 2.24 tonnes of green stemwood"*

"The Directive itself anticipates that forest harvesting for energy will continue to
expand. Recital 103 states: "Harvesting for energy purposes has increased and is expected to continue to grow, resulting in higher imports of raw materials from third countries as well as an increase of the production of those materials within the Union." There are several incentives in the Directive that make this increase more likely. To the extent that increasing demand for biomass drives additional forest harvesting for fuel and increases use of whole trees cut specifically for fuel..."

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Proforestation Mitigates Climate Change

2019-06-11-frontiers-research-proforestation-mitigates-climate-change-and-serves-the-greatest-good-english.pdf

In this paper it is argued, based on multiple studies on carbon sequestration in forests, that proforestation is the best way available to mitigate climate change and prevent loss of biodiversity. Proforestation (growing existing forests intact to their ecological potential) – is a more effective, immediate, and low-cost approach than afforestation and reforestation, and could be mobilized across suitable forests of all types. Forests are already responsible for the largest share of the carbon removal and since technologies for direct CDR from the atmosphere and bioenergy with carbon capture and storage (BECCS) are far from being technologically ready or economically viable (Anderson and Peters, 2016), forests in general, and proforestation in particular, are considered ever more important for mitigating climate change. On top of that they provide unparalleled ecosystem services such as biodiversity enhancement, water and air quality, flood and erosion control, public health benefits, low impact recreation, and scenic beauty.

"Today, <20% of the world's forests remain intact (i.e., largely free from logging and other forms of extraction and development)."

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The United Nations Emissions Gap Report

2019-05-14-un-environment-the-emissions-gap-report-2017-executive-summary-english.pdf

This report, which is the eighth Emissions Gap Report produced by UN Environment, focuses on the "gap" between the emissions reductions necessary to achieve these agreed targets at lowest cost and the likely emissions reductions from full implementation of the Nationally Determined Contributions (NDCs) forming the foundation of the Paris Agreement and discusses "bioenergy" in combination with "carbon dioxide capture and storage".

"Use of agricultural and forest residue as a feedstock for bioenergy does not require competition for land, although its extraction can adversely impact soil carbon stocks. The potential competition for land from widespread use of bioenergy with carbon capture and storage remains a major issue for large-scale bioenergy with carbon capture and storage deployment and policymaking"

"Although individually, both bioenergy and carbon dioxide capture and storage are relatively mature technologies, in combination they have seen very little demonstration and deployment, especially at a large scale. Whether bioenergy with carbon dioxide capture and storage can thus be scaled up in the manner required to achieve ambitious climate change targets remains questionable, given the lag in actual carbon dioxide capture and storage deployment, compared to the requirements associated with emissions pathways that are compatible with the 2°C target."

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Availability of Biomass from Forests in the Netherlands

2019-05-00-probos-beschikbaarheid-van-houtige-biomassa-uit-bos-landschap-stedelijk-groen-dutch.pdf

Probos and Borgman Beheer Advies have been commissioned by the Dutch Enterprise Agency to create a report on the demand for woody biomass in the form of chips and shreds in the Netherlands will develop and what part of this biomass can be accounted for (ie sustainable) harvested from the Dutch forest, landscape and urban greenery. [Be aware: both Probos and Borgman Beheer Advies are major players in our paid pro biomass lobby research]

"On account of current figures about the harvest and utilization, it becomes clear that 78 percent of the potential [of woody biomass] is already being utilized."

"In the short term (2018-2020) we expect an increase of 244 kt. of dry matter compared to the situation in 2017 (301 kt.). This means that the demand for fresh woody biomass for energy in the Netherlands will increase by almost 81 percent in the short term."

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The Reputational & Financial Risks of Investing in Forest Biomass Energy

2019-04-00-environmentalpaper-the-reputational-and-financial-risks-of-investing-in-forest-biomass-energy-english.pdf

This briefing document, a collaborative effort by Environmental Paper Network, Biofuelwatch and Global Forest Coalition, sums up the reputational and financial risks involved with investing in forest biomass energy.

"Reputational risks stem from the growing awareness and body of evidence showing that forest biomass is far from being a low carbon or even carbon neutral energy source. [...] Reputational risks can translate into financial risks given the high level of dependence of this form of energy on public subsidies. Failure to fully disclose environmental, social and governance (ESG) risks in portfolios exposes financial institutions to regulatory risk."

"Generating electricity from biomass is more expensive than generating it from other forms of renewable energy. [...] . Wood prices are strongly affected by demand, hence they cannot be expected to fall if bioenergy from forest wood continues to increase – particularly since the energy sector competes with the pulp and paper and other industries for the same wood resources."

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Mitigation Pathways Compatible with 1.5 Degreas

2019-04-00-ipcc-report-global-warming-chapter-2-mitigation-pathways-compatible-with-1-5-degreas-in-the-context-of-sustainable-development-english.pdf

This chapter in the IPCC report assesses mitigation pathways consistent with limiting warming to 1.5˚C above pre-industrial levels. One of the mitigation measures that is considered is Carbon Dioxide Removal (CDR)

and most scenario's to keep warming below 1,5 degrees need at least some type of CDR, but for most types more research is needed and are therefore not integrated into the mitigation models. That is, except for carbon capture and storage in combination with biomass energy (BECCS), since this is one of the few CDR measures that have been more thoroughly investigated. But, as additional CDR measures are being built into IAMs (Integrated Assessment Modeling), the prevalence of BECCS is expected to be further reduced.

"This reflects the fact that afforestation is a readily available CDR technology, while BECCS is more costly and much less mature a technology."

"Concerns have been raised that building expectations about largescale CDR deployment in the future can lead to an actual reduction of near-term mitigation efforts. The pathway literature confirms that CDR availability influences the shape of mitigation pathways critically. Deeper near-term emissions reductions are required to reach the 1.5˚C–2˚C target range if CDR availability is constrained."

"Evaluating the potential from BECCS is problematic due to large uncertainties in future land projections due to differences in modelling approaches in current land-use models, and these differences are at least as great as the differences attributed to climate scenario variations. […] It is not fully understood how land-use and land-management choices for large-scale BECCS will affect various ecosystem services and sustainable development, and how they further translate into indirect impacts on climate, including GHG emissions other than CO2. "

"BECCS rely on CCS and would require safe storage space in geological formations, including management of leakage risks and induced seismicity.

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Burning Woody Biomass is Not CO2-Neutral

2019-03-25-wetenschappelijkbureaugroenlinks-maak-een-einde-aan-de-co2-neutraliteit-van-houtstook-dutch.pdf

In this document the scientific think tank of GroenLinks (GreenLeft party) argues against the status of burning woody biomass for our energy supply as carbon neutral, and in effect, against subsidizing the burning of woody biomass. They suggest CO2 emissions caused by the burning of biomass should be added to the total sum of emissions of the country where the

biomass is actually burned. And the CO2-balance should be checked by taking up the preliminary CO2 uptake in the LULUCF balance of the country where the biomass stems from.

"Biomass as an alternative to coal or oil is currently popular in the Netherlands, because technology is already in place and coal plants only need minor adjustments to be suitable for the burning biomass. But the Planbureau voor de leefomgeving ("Bureau for the living environment") objects to this by pointing out that there's just not enough available biomass. A telling example: there isn't even enough biomass available in the Netherlands to fire up the plant in Diemen alone."

"In theory biomass is a renewable resource, but there are limits to its availability. There's just not an endless supply of land, nutrients and water on this planet. […] The burning of biomass can't be scaled up to meet our current energy demands."

READ MORE

Europe's RED Policy is Built on Burning American Trees

2019-03-04-vox-europes-renewable-energy-policy-is-built-on-burning-american-trees-english.pdf

This Vox-article discusses how it came to be that Europe's banking on biomass to meet their obligations under the Paris agreement is causing forests to be felled in the US (and elsewhere) and how large scale deployment of biomass for energy is in fact failing to meet any carbon reduction targets at all.

"To meet just an increase of 3 percent in global energy demand with wood, the scientists wrote, the world would have to double its commercial logging."

"In the 19th century, the scientists concluded, "the use of wood for bioenergy helped drive the near deforestation of western Europe even when Europeans consumed far less energy than they do today."

"The idea that the biomass industry runs only on waste from the lumber industry's clearcuts is disputed by land activists with groups like the Dogwood Alliance […]"

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EU Dragged to Court for Backing Forest Biomass as RED

2019-03-04-euractiv-eu-dragged-to-court-for-backing-forest-biomass-as-renewable-energy-english.pdf

This article, which was published early march 2019 on www.earactiv.com, reports about a group of plaintiffs from Estonia, France, Ireland, Romania, Slovakia, Sweden, and the US, filing a lawsuit against the European Union to challenge the inclusion of forest biomass in the bloc's renewable energy directive. The group argues that EU institutions have failed to take account of scientific evidence showing that forest biomass harvesting and combustion for energy purposes exacerbates climate change by causing deforestation outside of Europe.

"Trees do not grow back fast enough to compensate for these initial emissions, which means the wood is not generally a sensible alternative to fossil fuels".

READ MORE

Durable Usage of Woody Biomass in the Netherlands

2019-02-20-gnmf-aanbevelingen-hoogwaardige-inzet-houtige-biomassa-dutch.pdf

This report has been prepared by the Gelderland Nature and Environment Federation and contains the recommendations for the municipal Climate and Energy Implementation Program and the Regional Energy Strategies (RES).

"[...] 80% of the woody biomass potential in the Netherlands is already being harvested and processed."

"More woody biomass for generating more bioenergy requires the import of woody biomass. This does not fit in with the goal of achieving a circular economy, nor with a fair allocation of raw materials. On top of that, only a limited amount of woody biomass is certified."

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EASAC Forest Bioenergy BECCS and CO_2 Removal

2019-02-10-easac-forest-bioenergy-carbon-capture-and-storage-and-carbon-dioxide-removal-english.pdf

As global emissions of carbon dioxide (CO_2) continue to exceed levels compatible with achieving Paris Agreement targets, attention has been focusing on the role of bioenergy as a 'renewable' energy source and its potential for removing CO_2 from the atmosphere when associated with carbon capture and storage (CCS). This new commentary of EASAC updates its findings from 2017/2018, based on peer-reviewed papers and environmental reviews that have been published since then. The overall conclusion is that the use of biomass, even when combined with with carbon capture and storage (BECCS) remains associated with substantial risks and uncertainties, both over its environmental impact and ability to achieve net removal of CO_2 from the atmosphere. The large negative emissions capability given to BECCS in climate scenarios limiting warming to 1.5˚C or 2˚C is not supported by recent analyses [...]"

"The replacement of temperate forests to grow the bio-crops offering such high yields has been shown to release so much soil carbon that the BECCS-driven crop would have to be grown for over 100 years before the initial surge in atmospheric CO_2 levels from conversion was offset and net negative emissions could be achieved."

"BECCS deployment at the huge scales envisaged in many scenarios may greatly overestimate our collective ability to manage carbon cycle flows, thereby risking doing more harm than good. Moreover, [research of] Mander et al. point to the huge technical, material, logistical and financial barriers which would have to be overcome to implement sufficient BECCS facilities to remove the amounts of CO_2 included in scenarios achieving Paris Agreement targets"

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Investor Report the Biomass Blind Spot

2019-02-06-shareaction-investor-report-the-biomass-blind-spot-english.pdf

Carbon emissions from burning wood have been ignored by utility companies and policy makers for two reasons. Firstly, because it is incorrectly seen as a "renewable" resource. The carbon emissions from combustion are assumed to be recaptured as trees regrow. However, at the point of combustion, wood emits more CO_2 than coal. It takes decades for this carbon to be reabsorbed by forest growth. Given that we urgently need to reduce greenhouse gas (GHG) emissions over the short-term to reach a

net zero energy system by 2050, biomass is not compatible with achieving this. The second reason is related to international carbon accounting rules. UNFCCC's reporting guidelines require GHG emissions related to bioenergy to be counted in the land-use sector, where the tree is felled rather than at the point of combustion. […] This paper challenges the assumption that carbon is recaptured by forest regrowth, at the rates required to offset emissions from combustion. Converting natural forests into a managed or plantation forest reduces their stored carbon. In addition, the methods used to grow and harvest biomass feedstocks also have an enormous impact on how quickly forest carbon can recover."

"As the UK's biomass power generation has grown and demand for biomass has risen, feedstocks have become more carbon intensive. In 2007 over half of the UK's "renewable" energy was generated from waste but by 2016 the sector became dominated by virgin biomass, largely in the form of imported wood pellets."

"Research by the Environmental Paper Network shows that demand for industrial wood pellets exceeded 14 million tonnes in 2017. In the next decade, it is expected to more than double to over 36 million tonnes." (for the Netherlands it is projected to rise from 0,3 million tonnes in 2017 to 3,0 million tonnes in 2027.)

"If these recommendations [to secure sustainability] were properly implemented and audited, forestry practices for biomass would have to change dramatically, reducing the supply of biomass and therefore the scale of the industry."

READ MORE

EU Report on Biomass for Energy in the European Union

2019-02-00-european-commission-brief-on-biomass-for-energy-in-the-european-union-english.pdf

This report on biomass for energy from the European Union (2016) sums up how much of the various sources for bioenergy is being produced and used in several EU nations. What is perhaps most striking is that in 2016, the share sourced from forestry was already higher than that foreseen in the NREAP projections for 2020, while the share from agricultural by-products and waste lagged behind the 2020 projections.

"In 2016, the share sourced from forestry was already higher (81 Mtoe) than that foreseen in the NREAP projections for 2020, while the share from agricultural by-products and waste lagged behind the 2020 projections (76 Mtoe)."

"Global production reached 29 million tonnes in 2016 of which more than 50% was produced in the EU. The EU is also the main consumer globally (23 million tonnes)."

"In some Member States, the consumption of wood pellets relies mostly on imports, e.g. the UK (94.7%) and Italy (81%)."

READ MORE

All Research Papers on Deforestation & Woody Biomass

https://biomassmurder.org/research/index.html

We have collected and read all the research reports and official documents from the past decades and have started to make summaries for each subject and published the summaries on the following pages:

Biomass Research Abbreviations

Biomass Research Availability

Biomass Research Biodiversity

Biomass Research Carbon Dioxide

Biomass Research Certification

Biomass Research Ecotoxicity

Biomass Research Health Risks

Biomass Research Legal

Biomass Research Lobby Facts

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Biomass Research Solutions

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Biomass Research Whole Trees

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