

CAN SUSTAINABILITY AND GREENHOUSE GAS STANDARDS PROTECT THE CLIMATE, FORESTS AND COMMUNITIES FROM THE HARMFUL IMPACTS OF WOOD-BASED BIOENERGY?

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Logging in mature hardwood forests where pellet company Enviva sources pellet wood, North Carolina. Photo Dogwood Alliance.

SUMMARY

Greenhouse gas and sustainability standards have been in place for liquid biofuels for several years (especially in the EU and, in the case of greenhouse gas standards only, the USA). Some countries, such as the UK and the Netherlands, have adapted this approach to subsidised wood-based bioenergy and others, such as Denmark, are considering doing the same.

This briefing explores whether there is any evidence that such an approach could, if not rule out, then at least mitigate adverse impacts of biomass subsidies on forests and the climate. Although the briefing does not discuss impacts on communities, the destruction of forests has devastating impacts on people who depend on forests for their livelihoods, for clean water, for protecting them from extreme weather, or simply for their enjoyment of nature. Expansion of monoculture tree plantations causes widespread land-grabbing in the global South and drives the destruction of forests and other natural ecosystems as well as displacing food production worldwide. Women are particularly affected by these impacts as they tend to be more dependent upon the non-monetary resources found in forests and they tend to have weaker land tenure rights. They are also disproportionately affected by climate change itself.

We start off by looking at whether biomass sustainability and greenhouse gas standards can minimise harm to the climate. As 800 scientists have said,¹ the life-cycle greenhouse gas emissions of wood-based bioenergy are not in any way related to forest management practices. Introducing 'sustainable forest management' standards for biomass does nothing to protect the climate.

1. http://www.pfpi.net/wp-content/uploads/2018/04/UPDATE-800-signatures_Scientist-Letter-on-EU-Forest-Biomass.pdf

So far, all biomass greenhouse gas standards introduced use a methodology that does not take any account of the carbon released when burning wood, nor the carbon lost when forests are logged, nor of the carbon that will no longer be sequestered because trees have been logged and burned for energy. Scientists and environmental NGOs have called for greenhouse gas standards based on a far more credible methodology. The possibility of developing and implementing such an approach is discussed in detail. The obstacles to such an endeavour are found to be formidable: there is no scientific consensus about how best to account for emissions linked to bioenergy, and scientific studies suggest that life-cycle emissions vary according to ‘counterfactuals’, i.e. assumptions about what else might happen to a forest or tree plantation or to wood residues in the absence of a demand for bioenergy. Even if those obstacles could be overcome, greenhouse gas standards could still not address the all-important indirect impacts of biomass energy, caused by increasing the overall demand for wood.

Another approach that has been put forward by many environmental NGOs is to introduce biomass standards that limit wood use to residues. However, there is no internationally accepted definition of ‘wood residues’ and, furthermore, forestry companies have long countered critics by describing large volumes of roundwood as ‘low-grade wood and residues’. Even if industry could be held to a strict definition of residues, the use of forest industries for energy would still result in carbon emissions incompatible with the need to stop climate change from escalating further. Furthermore, pushing up the demand for residues and waste wood would divert it from existing markets, thus pushing up overall demand for wood and thereby logging rates.

The next fundamental problem explored is that of credible verification and auditing, especially with regards to often highly complex international supply chains. Sustainability and greenhouse gas standards – just like voluntary certification programmes – outsource auditing and verification to private companies chosen and paid for by the energy or forestry company looking for a certificate. Commonly, ‘verification and auditing’ relies entirely on trails of paperwork, with no site visits involved. In the Netherlands, a large biodiesel producer was recently found guilty of fraud: Biodiesel Kampen had fraudulently declared biodiesel feedstock – likely virgin palm oil – as Used Cooking Oil in order to take advantage of higher incentives. The company succeeded in obtaining a certificate from a widely recognised voluntary certification scheme that also certifies ‘sustainable biomass’, ISCC. Although ISCC was not responsible for the fraud, the case exposes the lack of due diligence and safeguards against fraud. Such fraud can happen at any part of a supply chain.

Exposing false declarations about the sourcing of biomass imports would be far harder than discovering the type of fuel used (as in the case of Biodiesel Kampen).

Next, the briefing looks at the serious challenges that would be involved in developing and implementing bioenergy standards which were robust enough to stop certain subsidies for certain sources of imported wood. Such measures would likely trigger challenges under the World Trade Organisation and other multi- and bilateral trade agreements. Fear of such challenges led to the EU not agreeing to Indirect Land Use factors or to social standards for biofuels.

Finally, a brief examination of biomass use in the UK and the Netherlands, where mandatory sustainability and greenhouse gas standards have been enacted, shows that those have not even prevented energy companies from sourcing wood pellets from Enviva, a company shown to routinely source wood from the clearcutting of highly biodiverse forests in the Southeastern USA. Introduction of standards has not led to any known changes in pellet and wood sourcing practices.

Sustainability standards have not been shown to be an effective tool for avoiding or even reducing the negative impacts of biomass energy on the climate, on forests, on biodiversity and on communities. Unless subsidies and other incentives for biomass energy are abolished, there is no credible mechanism for preventing it from aggravating climate change and speeding up the destruction of forests worldwide.

INTRODUCTION

Use of wood-based bioenergy for electricity and heat has been rapidly increasing in recent years, especially in the EU but also in North America, East Asia and other regions. This is the result of renewable energy subsidies, put in place to achieve renewable energy and carbon reduction targets. At the same time, there is growing awareness that burning wood from forests and tree plantations on an industrial scale is not compatible with efforts to avoid the worst impacts of climate change, that it is causing more forest degradation and forest conversion to plantations, and that it is no less polluting than burning coal.

Countries including the UK and Netherlands have therefore introduced a set of sustainability and greenhouse gas standards which need to be met in

order for biomass energy to attract renewable energy subsidies. Other countries are considering doing the same, and very minimal standards are being phased in by the EU. Such standards are meant to address impacts on the climate, on forests and on biodiversity. In theory, social standards, such as communities' Free, Prior and Informed consent to projects or labour rights could be included in biomass sustainability standards, but this has not so far happened anywhere. Air pollution and other public health impacts are generally (though usually inadequately) addressed through emissions and air quality standards, which are commonly enforced by environment agencies. Those are very different from the standards discussed here (i.e. from biomass sourcing standards).

CAN 'SUSTAINABLE FOREST MANAGEMENT' STANDARDS FOR BIOMASS PREVENT OR MINIMISE ADVERSE CLIMATE IMPACTS OF FOREST BIOMASS ENERGY?

Industry and other advocates of wood-based bioenergy frequently propose that "sustainable forest management" can make wood-based bioenergy 'carbon neutral' (except for fossil fuel carbon emissions associated with logging, transport and processing). It is important to note that there is no universally agreed definition of what 'sustainable forest management' means. Forestry companies and their political supporters commonly use the term 'sustainable forest management' to include monoculture tree plantations which may be linked to land-grabbing, depletion of soils and freshwater, biodiversity destruction, as well as logging practices which harm wildlife, reduce species diversity of trees and degrade and destroy forests ecosystems.

However, there is a fundamental problem with linking any standards that focus on forest management to eligibility for renewable energy subsidies for biomass: In January 2018, a letter signed by 800 scientists warned MEPs about the harm caused by EU support

for forest biomass as renewable energy. The letter stressed:

"Even if forests are allowed to regrow, using wood deliberately harvested for burning will increase carbon in the atmosphere and warming for decades to centuries –as many studies have shown –even when wood replaces coal, oil or natural gas. The reasons are fundamental and occur regardless of whether forest management is 'sustainable.'"²

Later that year, a peer-reviewed study showed that even biomass energy from genuine forestry residues is incompatible with the need to limit global warming to 1.5 degrees.³

It is clear therefore that 'sustainable forest management' standards – regardless of how such forest management is defined - cannot address the climate impacts of biomass energy.

2. http://www.pfpi.net/wp-content/uploads/2018/04/UPDATE-800-signatures_Scientist-Letter-on-EU-Forest-Biomass.pdf

3. <https://iopscience.iop.org/article/10.1088/1748-9326/aaac88>

CAN GREENHOUSE GAS STANDARDS STOP THE BURNING OF WOOD LINKED TO HIGH CARBON EMISSIONS FOR ENERGY?

Some countries such as the UK have introduced a maximum limit on greenhouse gas emissions ('greenhouse gas standards') which must be complied with in order for biomass energy to attract subsidies. However, life-cycle emissions accounting is restricted to little more than accounting for fossil fuel emissions, for example from natural gas burned in pellet mills or diesel or petrol emissions from transporting woodchips or pellets.

Many scientific studies look at the life-cycle greenhouse gas impacts of burning variously sourced and different types of wood and other biomass. It is increasingly recognised that classifying bioenergy as carbon neutral is wrong and dangerous. After all, the carbon emitted by burning wood from trees today will not be sequestered by new trees overnight. However, there is no agreement between scientists about how best to account for life-cycle emissions of biomass energy. For example, an in-depth report commissioned by the UK government in 2014⁴ identified 29 different scenarios for wood pellets imported from the southern USA, including three for sawmill residues and five for forest residues. One greenhouse gas value was assigned to each scenario. Scenarios were distinguished according to different 'counterfactuals', i.e. assumptions about what would happen to a particular forest or tree plantation, or to particular sources of wood residues in the absence of a demand for pellets. Whilst this makes sense in a scientific debate, it seems far-fetched to imagine such an approach being translated into legally binding and enforceable standards. Even if consensus about the underlying science could be reached – which would be difficult – assumptions about 'counterfactuals' or futures scenarios will always be highly contested and impossible to prove.

In this context, it is worth looking at the EU debate about Indirect Land Use Change (ILUC) emissions

from liquid biofuels. It is widely accepted that converting agricultural land to biofuel production pushes the agricultural frontier further into forests, peatlands and other ecosystems and that this results in significant carbon emissions. However, proposals to account for those impacts by introducing 'ILUC-factors' for different feedstocks were ultimately rejected as laying the EU open to challenges under the World Trade Organisation (WTO). Those opposing ILUC-factors as contradicting WTO rules argued that actual ILUC emissions cannot be observed or measured, but only estimated, and that one agricultural producer should not be held responsible for the actions of others.⁵

A methodology for estimating different life-cycle carbon emissions linked to forest biomass, along the lines described above, would be more complicated and rely more heavily on assumptions about different future developments than ILUC factors for biofuels. In short, the **challenges of developing, let alone legislating for, scientifically credible greenhouse gas standards for forest-biomass would be formidable – and the possibility of reliably verifying appropriate greenhouse gas factors for different wood assignments seems remote.**

Finally, **engaging in such an effort would do nothing to address the indirect impacts of subsidising and thus creating a large new demand for wood.**



4. Life-Cycle Impacts of Biomass Electricity in 2020, Dr Anna Stephenson and Professor David MacKay, DECC, July 2014, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/349024/BEAC_Report_290814.pdf

5. See for example <https://ecipe.org/wp-content/uploads/2014/12/OCC32013.pdf>

WHAT ABOUT HAVING STANDARDS THAT ONLY ALLOW FORESTRY AND FOREST RESIDUES AND WASTE WOOD TO BE USED/SUBSIDISED FOR ENERGY?

In the past, many NGOs felt that restricting wood-based bioenergy to the use of residues and waste wood would protect forests and climate. The hope was that this would limit the overall demand for wood for energy.

However, two major problems with such an approach have become apparent:

Firstly, as pointed out above, the direct life-cycle carbon emissions from burning wood residues for energy may be lower than those of burning whole trees (i.e. roundwood) – but they are still far too high to help limiting global warming to 1.5 or even 2 degrees. This is true even before one looks at indirect impacts (see below). Subsidising wood bioenergy will always divert money away from what needs to be done to drastically reduce emissions,

such as insulating homes or investing in community-led clean renewable energy.

Secondly, there is no internationally agreed definition of ‘residues’. There is a long history of forestry companies countering public critique and campaigning against destructive logging by claiming that most or all of the wood they use consists of **‘residues’ or ‘low-grade wood’**. **Those terms are routinely applied to the largest proportion of all logged wood**. Healthy trees cut down are described that way because they may be too small, too large or too crooked for sawmills. Yet without the demand for relatively cheap wood for biomass energy or pulp and paper, there would be far less incentives for extensive clearcutting of forests in regions such as the Southeastern USA or Europe.

A PROBLEM OF SCALE: STANDARDS ADDRESS SOURCING PRACTICES, NOT THE SIZE OF THE DEMAND FOR WOOD

The overall purpose of sustainability and greenhouse gas standards is to regulate – or rather make companies self-regulate – their biomass sourcing policies in order to access subsidies and other incentives. Yet as long as subsidies and other incentives for wood-based bioenergy remain in place, the overall demand for wood continues to expand. Excessive global demand for wood is already a major driver of forest degradation and of the depletion of forest carbon sinks. Leakage means that when one country or sector uses less controversial wood sources, the most controversial ones will simply be pushed onto other markets.

An example is RWE’s biomass plant in Scotland: RWE burns primarily waste wood (i.e. wood previously used in construction, furniture, etc.) in its combined heat and power plant in Fife, Scotland. The direct impacts on forests are thus minimal. However, Biofuelwatch learned (by a credible source who needs to remain anonymous) that as a result of this

power station now burning waste wood, a large panelboard factory which previously recycled waste wood is now importing roundwood from Brazil instead.

Standards that focus on energy companies’ sourcing policies whilst allowing overall wood demand to grow due to bioenergy subsidies and incentives will therefore do nothing to protect forests from destruction and degradation. If sustainability standards were to have any impact in terms of limiting forest degradation for biomass energy, they would need to be so strict as to limit the overall amount of forest biomass burned in a country. Given the inherent problems with verification and auditing and with the all-too-flexible international definition of ‘wood residues’, the idea that standards could limit demand seems far-fetched, especially in the context of an import-reliant supply chain.

THE PROBLEM WITH VERIFICATION

Verification and auditing of biomass and biofuel sourcing – or rather the lack of any credible mechanisms for ensuring that feedstock really does meet any standards at all - is one of the fundamental problems with bioenergy sustainability and greenhouse gas standards. Standards differ from regulations in that there is no regulatory authority overseeing and enforcing their implementation (other than checking that required paperwork is submitted). In order to meet biofuel or biomass standards, an energy company is required to choose and pay a company specialising in certification services, which provides the documentation that all standards are complied with. Usually, the certifying company will scrutinise the paperwork from the woodchip or pellet supplier and, possibly, actors further down the supply chain. If the woodchip or pellet supplier can show that the wood is covered by a voluntary certification scheme recognised under the sustainability standards scheme, then no additional paperwork will be required (except for completing greenhouse gas accounting forms).

Voluntary certification schemes are based on the very same principle: Timber companies or companies sourcing wood from them choose and pay a certifying company to confirm that a standard is met – be it a standard of the Sustainable Biomass Program (SBP), Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) or another scheme. Some of those standards (e.g. FSC Forest Management certification) require site visits by the certifying company, others do not (e.g. Sustainable Biomass Program). Wood suppliers are free to ‘shop around’: if one certifying company turns out to be strict and refuses certificates, they can try and find another more amenable one – or they can pay for a different type of certificate that also meets the standards and thus gives them access to subsidies.

An invitation to fraud?

Public scandals over companies abusing any regulation or other system based on ‘self-certification’ are common. Well-known ones include the PIP breast

implant scandal, which saw a company get away with forging paperwork and selling industrial- rather than medical-grade silicone implants around the world over a period of nine years, as well as the European horse meat scandal exposed in 2013 (which involved unsafe horse meat being mis-labelled as beef).

So far, one major fraud related to EU biofuel certification has been uncovered: In the Netherlands, as in several other EU countries, biofuels made from Used Cooking Oil (UCO) have been double-counted towards EU Renewable Energy targets. This double-counting policy was introduced to ensure that waste-derived feedstocks would be used in preference of virgin plant oils such as palm or soybean oil. Investigations by Dutch authorities revealed by one company, Biodiesel Kampen, had routinely mislabelled its feedstock – most likely virgin palm oil – as UCO.⁶ The trial resulted in a prison sentence for the company’s former CEO and led to Biodiesel Kampen going bankrupt. Interestingly, Biodiesel Kampen had succeeded in getting its fraudulently labelled ‘UCO’ certified under a certification scheme (ISCC) widely used for certifying biofuel across the EU and also in California. ISCC also certifies ‘sustainable biomass’, for example under Dutch biomass sustainability standards. The fraud case puts ISCC’s credibility regarding due diligence into question.

Distinguishing between types of feedstock is much simpler than, say, tracking a consignment of wood back to where it was logged. Consistent monitoring of all wood sourcing and related logging activities in pellet producing regions such as the southern USA or Estonia would be impossible. Consignments of pellets can never be traced back to their precise source because all pellet mills source wood from a wide radius which, in turn, supplies a range of different customers, and because wood from different pellet mills usually feeds into the same biomass storage silos and ships. In short, ***if ISCC and, for a significant period of time, Dutch authorities got duped by a company that was mislabelling palm oil and Used Cooking Oil, fraud and***

6. <https://www.euractiv.com/section/agriculture-food/opinion/fraudulent-used-cooking-oil-biodiesel-bad-for-the-climate-and-a-blow-to-eu-farm-oilseed-and-plant-protein-sectors/>
AND <https://www.energyceus.com/Article/Dutch-court-sends-former-CEO-to-jail-for-biodiesel-fraud-8114.html>

misrepresentations in the wood biomass supply chain would be far harder to uncover.

Importantly, such fraud can happen at any stage of what can be a long, complex supply chain.

Ultimately, nobody will ever be able to prove if pellets come from forest residues, or roundwood, nor which forests or plantations all of the wood was sourced from.

GOVERNMENTS' INTEREST IN AVOIDING CHALLENGES UNDER WTO RULES AND OTHER TRADE AGREEMENTS FAVOURS WEAK SUSTAINABILITY STANDARDS

When the EU developed its biofuel sustainability standards, adopted in 2009, it ruled out the inclusion of social standards and also accounting for Indirect Land Use Change (ILUC) emissions via 'ILUC factors'. The reason for these two omissions was that social or ILUC emission standards were feared to be more likely to trigger WTO challenges.⁷

Trade experts even disagree on whether the EU's current, very weak biofuel sustainability standards are compatible with the WTO's restrictions on discrimination against 'like products' on the basis of their 'Process and Production Methods', or whether they are covered by an exemption. A case against greenhouse gas accounting for soya biodiesel was brought by Argentina in 2013 but put on hold, arguably because there was no evidence that the rules had been enforced effectively enough to have any impact on Argentinean soy biodiesel or feedstock exports for EU biofuels.⁸

Severely restricting the number of voluntary certification schemes approved to show that bioenergy feedstock complies with sustainability standards could very well fall foul of WTO rules. WTO rules on (voluntary) labelling state that when member states set standards for products, they must work towards international harmonisation of such standards.⁹ The EU (for biofuels) and EU member states (for biomass) have therefore accepted a number of different certification schemes as 'equivalent'. This means treating FSC as equivalent

to PEFC and, where pellets are concerned, SBP (Sustainable Biomass Program). SBP has been exposed by US conservation NGOs as providing a "smokescreen for forest destruction".¹⁰

Restricting biomass sourcing for example to wood from FSC-certified forests would clearly make countries vulnerable to a WTO challenge – particularly since FSC certifies very little wood in the southern USA, i.e. in the world's biggest pellet producing region.

For NGOs, it would be prudent to seek expert trade law advice before considering any proposals for 'strict' biomass sustainability standards.



Logging operations for Enviva, North Carolina. Photo Dogwood Alliance.

7. See <https://www.ictsd.org/sites/default/files/downloads/2011/12/sustainability-criteria-in-the-eu-renewable-energy-directive-consistent-with-wto-rules.pdf> in relation to ILUC factors and <https://www.ictsd.org/sites/default/files/downloads/2011/12/sustainability-criteria-in-the-eu-renewable-energy-directive-consistent-with-wto-rules.pdf> in relation to social standards.

8. https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds459_e.htm

9. [wto.org/english/docs_e/legal_e/17-tbt_e.htm#annexIII](https://www.wto.org/english/docs_e/legal_e/17-tbt_e.htm#annexIII)

10. <https://www.nrdc.org/media/2017/170629>

EXPERIENCE WITH BIOMASS SUSTAINABILITY AND GREENHOUSE GAS STANDARDS IN THE UK AND NETHERLANDS

In the UK and Netherlands, energy companies need to prove compliance with biomass sustainability and greenhouse gas standards in order to receive subsidies. The greenhouse gas standards focus on life-cycle carbon emissions from fossil fuel burning, e.g. during pellet transport. In Denmark, voluntary standards agreed by energy companies are modelled on the UK's mandatory standards. Both sets of sustainability standards focus on forest management, with a range of criteria that refer to a wide range of biodiversity and other environmental protections.¹¹ Dutch standards also include some restrictions on the proportion of roundwood that may be used from one sourcing region for bioenergy – although no reliable database for establishing how much roundwood goes to different forms of bioenergy exists internationally or across the EU. Both sets of standards rely on the verification and auditing system described above as effective 'self-certification'.

Both sets of standards include various loopholes – such as allowing 30% of each energy company's wood not to have to meet most of the standards at all.

Most importantly, energy companies in the UK, Netherlands and Denmark procure pellets from Enviva, the largest pellet producer in the world, which has been widely exposed for routinely sourcing roundwood from the clearcutting of coastal hardwood forest in the Southeastern USA, forests which lie at the heart of a global biodiversity hotspot.¹² In short, ***neither UK nor Dutch standards, nor Danish voluntary criteria have prevented some of the most controversial pellet sources from being burned and from attracting subsidies. We have found no evidence that they have had any discernible impact on wood sourcing for bioenergy.***

ARE THERE ANY GENUINELY EFFECTIVE BIOMASS STANDARDS?

There are examples of countries, and of the state of Massachusetts, implementing minimum efficiency standards for biomass-burning plants. ***Efficiency standards, like industrial emissions standards, are a widely used regulatory tool in regulating the power and heat sector***, one that is not comparable to standards related to the sourcing of biomass. Verifying whether a plant achieves a minimum conversion efficiency is straightforward and within the ordinary remit of environment agencies. A minimum efficiency standard of approximately 40%¹³ would rule out electricity-only biomass power stations, for example. In countries without any heat networks, a higher efficiency standard could halt all (new)

biomass plants. However, in countries where infrastructure and/or support for heat networks exist (e.g. Denmark), even high efficiency standards will do nothing to minimise control the demand for wood for energy.

The UK Government, in 2018, announced a policy to restrict subsidies for biomass electricity to combined heat and power plants with at least 70% conversion efficiency and, additionally, to apply such a ***low maximum greenhouse gas limit*** as to rule out the burning of imported pellets due to the fossil fuel transport and processing emissions involved.¹⁴ Campaigners believe that the decision will spell the

11.

<https://english.rvo.nl/sites/default/files/2016/03/SDE%20Sustainability%20requirements%20for%20solid%20biomass.pdf> and <https://www.gov.uk/guidance/sustainability-standards-for-electricity-generation-from-biomass>

12. dogwoodalliance.org/wp-content/uploads/2019/07/Biomass-Investigation-Booklet-2019.pdf,

https://www.washingtonpost.com/national/health-science/how-europes-climate-policies-have-led-to-more-trees-cut-down-in-the-us/2015/06/01/ab1a2d9e-060e-11e5-bc72-f3e16bf50bb6_story.html;

climatecentral.org/news/pulp-fiction-the-series-19592

13. This is an approximation because there are different ways of calculating efficiency and setting standards used by different countries.

14. <https://www.ashurst.com/en/news-and-insights/insights/energysource-uk-contracts-for-difference/>

end for new biomass power developments in the UK. There are good reasons to think that the current UK policy – which does not affect biomass plants already granted subsidies – was introduced with the clear purpose of de-facto ending all subsidies for new developments. However, the new criteria have so far only been applied to one recent renewable energy auction round and have not been translated into regulations or even guidance, which means that they might not be followed in future.

It is also **common practice for governments to distinguish between different bioenergy feedstock categories** and to exclude some of them from subsidies. For example, in the USA, biofuels made from crude palm oil are not covered by the Renewable Fuel Standard nor by the Californian Low Carbon Vehicle Standard. In some European countries, biogas subsidy regimes distinguish between biogas from waste (e.g. food waste) and biogas from dedicated crops (e.g. maize). Verifying the type of feedstock used is far simpler than

verifying how and where it was procured. However, without proper enforcement and spot-checks, there will always be a risk of fraud of the type committed by Biodiesel Kampen (see above).

At least two EU countries – **Portugal and Slovakia – have legislated to restrict biomass subsidies to the burning of wood residues in biomass plants.** Both countries so far rely mostly on burning domestic wood in such plants and import very little wood for energy. This means that verifying how and where operators of biomass plants procure wood is far simpler than in import-reliant markets.

Nonetheless, NGOs in both countries have reported serious breaches of the rules and shown that roundwood continues to be used in subsidised plants, contrary to the legislation.¹⁵ The NGOs are campaigning for enforcement of the rules, however in the meantime **these policies cannot be considered a success.**

CONCLUSIONS

Governments and many environmental NGOs are looking to biomass greenhouse gas and sustainability standards as means of either ensuring that biomass energy is climate-friendly and sustainable, or at least preventing the most harmful impacts from large-scale wood-based bioenergy. Sustainability and/or greenhouse gas standards have been applied to liquid biofuels for many years, especially in the EU and (in the case of greenhouse gas standards only) in the USA. Unfortunately, no evidence has ever been published that shows such standards to have been effective. Nor is there any evidence that adapting them to wood-based bioenergy could prevent seriously adverse impacts on the climate and forests. The main reasons for this are:

- Standards cannot mitigate leakage or indirect impacts caused by an overall increase in demand for wood. There are only two possible

ways of meeting an overall rise in the demand for wood: more logging of existing forests and tree plantations, or more land conversion to tree plantations, especially fast-growing ones, such as eucalyptus. More extensive and intensive logging degrades forests and harms the climate by reducing the amount of carbon stored in and sequestered by trees. And new tree plantations displace natural ecosystems and/or other uses of land, resulting in indirect land use change which can be far worse for the climate, wildlife and communities than any of the direct impacts of biomass energy. The only way to prevent such impacts is to reduce total demand for wood, or at least stop it from increasing further. Subsidies and other incentives for wood-based bioenergy are designed to increase wood demand. No sustainability or greenhouse gas standard can change this fact.

15. <https://www.desmog.co.uk/2019/07/04/creative-carbon-accounting-how-industry-and-government-make-burning-wood-look-climate-solution> and <https://www.publico.pt/2020/01/11/economia/noticia/queixa-madeira-boa-queimada-electricidade-forca-inspecao-1899923>

- “Sustainable forest management” does not address climate impacts: Scientific studies clearly show that applying forestry management standards to forest biomass cannot even reduce the direct adverse climate impacts of this source of energy, let alone the indirect ones;
- Voluntary certification schemes wide open to fraud: There are no credible means of auditing and verifying the sourcing of internationally traded biomass – as illustrated by the recent fraud conviction associated with a major biodiesel producer in the Netherlands;
- International trade rules are a race to the bottom: Governments’ interest in avoiding WTO and

other potential trade lawsuits will always favour the weakest of standards. For example, the EU considers any ‘social standards’, i.e. standards aimed at addressing land-grabbing and human rights abuses, to be incompatible with WTO rules and has ruled them out for biofuels (and by implications for biomass).

The only credible way of stopping the escalating demand for wood-based bioenergy is to stop subsidies for it. Energy subsidies should be reserved for genuinely low-carbon forms of renewable energy which do not harm communities, biodiversity and ecosystems – and for energy efficiency and energy conservation to help end wasteful energy use.

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Biofuelwatch provides information, advocacy and campaigning in relation to the climate, environmental, human rights and public health impacts of large-scale industrial bioenergy.

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The Global Forest Coalition (GFC) is an international coalition of NGOs and Indigenous Peoples’ Organisations defending social justice and the rights of forest peoples in forest policies.

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