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Frequently Asked Questions About the Renewable Wood Energy Industry

What is renewable wood energy (also called bioenergy or biomass)?
Wood energy is a renewable fuel made from forest residues and by-products.

Who uses wood energy, and why do they use it? Power producers seeking to decrease their dependence on fossil fuels and reduce their emissions of carbon dioxide and other pollutants are the primary users of bioenergy. European governments have adopted aggressive, mandatory renewable energy targets for 2020 and beyond. Many EU Member States have put additional regulations in place that are designed to phase out or significantly reduce the use of coal and other fossil fuels. Existing coal-fired infrastructure can be converted to use wood-based bioenergy.

Is bioenergy good for the environment? Yes. According to the UK Environment Agency, switching from coal to bioenergy for power production results in a reduction of between 74% and 90% in net carbon emissions. The main reason for this is the carbon cycle. When wood bioenergy is burned, the carbon that the wood absorbed during growth is released into the atmosphere. In contrast, fossil fuels add to overall levels of CO2 in the atmosphere because the carbon released would have remained underground indefinitely.

In sustainably managed forests, new trees grow and re-absorb carbon through photosynthesis. In many species, young trees are better at storing carbon than mature trees. This cycle makes the use of sustainably harvested and manufactured wood bioenergy for energy generation a low carbon solution. In fact, if more trees are grown than are removed, which has been the case in the United States for the past 60 years, the overall effect from forests is a net decrease of carbon in the atmosphere.

In addition to its carbon benefits, wood bioenergy emits significantly lower levels of ash, nitrogen, sulfur, mercury, and other heavy metals that are harmful to the environment, according to studies at the National Renewable Energy Lab and the EPA, among others.

Finally, the wood bioenergy industry is good for the health of American forests. Managed forests like the ones USIPA members source fiber from absorb more carbon and are more biodiverse than unmanaged forests. Given recent declines in demand for wood fiber, our industry provides a much-needed outlet for lower-value, unmarketable wood. The data shows that landowners respond to these incentives by maintaining and replanting their forests rather than leaving them fallow or converting them to development.

Does bioenergy cost more than other renewables? Does it cost more than coal?
Bioenergy is one of the most cost-effective renewable energy resources. The cost of bioenergy power generation in Europe is less than the cost of offshore wind, solar thermal and solar PV. In addition to the low generation costs, bioenergy also has low “grid level” costs. These are the

costs incurred by energy transmission companies to cope with the intermittent nature of other renewable resources. Bioenergy does currently cost more than coal, however as both the industry matures and more governments place a price on carbon emissions, this gap will narrow substantially.

Are there other feasible, cost-effective alternatives available that could facilitate the transition away from coal?
Bioenergy is one of the most cost-effective forms of renewable energy, second only to on-shore wind. However, bioenergy is distinct from other forms of renewable energy because it provides reliable, base load power that is available when needed, not only when the wind blows or the sun shines. This enables reliable operation under all conditions and guarantees both that the environment is protected and the lights will stay on.

Is burning trees for electricity inefficient because of the moisture in the wood?
During the manufacturing process for wood pellets, moisture content is reduced from approximately 50% to less than 10%, making the pellets more economical to ship and more efficient to burn.

What is sustainability?
For the wood pellet industry, sustainability means ensuring that we are able to produce wood bioenergy without harming or depleting the environment or compromising this resource for future generations. Wood is one of the world's greatest renewable resources, but because we need forests to thrive over the long term, we demand sustainable practices from our suppliers.

What are some examples of sustainable practices?
Forest Best Management Practices (BMPs) are implemented at the state level under the authority of the Clean Water Act. They mandate road-building rules, treatment of run-off, establishment of buffer zones, and other time-tested measures. In the legal logging of bottomland and wetland ecosystems, for instance, loggers use specialized equipment and procedures to minimize environmental impacts and prevent soil compaction, rutting and erosion.

Additionally, USIPA members producing biomass hold chain of custody and fiber sourcing certifications from leading, independent forestry certification bodies which are regularly audited. These certifications allow our members to demonstrate sustainability and responsible industry practices within their supply chains and local wood baskets.

How are wood pellets manufactured?
USIPA members extract moisture from ground wood fiber to produce small cylindrical particles of uniform size that burn efficiently in the facilities that utilities use to produce electricity.

Where does the industry get the wood it uses to make wood pellets?
Wood for pellets are sourced from forests in the southeastern United States, including Texas, Louisiana, Alabama, Mississippi, Georgia, Florida, South Carolina, North Carolina, and Virginia.

Why do you use wood from forests in the southeastern United States?
The southeastern United States is home to vast and growing forests that are capable of supplying sustainable wood fiber over the long term and in which trees are growing faster than they are being harvested. The region also has a long history of strong forest markets and sustainable forest management. In addition, our plants are located in rural communities that have been hit hard by the 2008 recession and where the good jobs we provide are greatly needed.

What parts of the forest are used?

- Low-grade wood fiber: Wood that is unsuitable for or rejected by the sawmilling and lumber industries because of small size, defects (e.g. crooked, knotty, etc.), disease, or pest-infestation;
- Tops and limbs: The parts of trees that cannot be processed into lumber;
- Commercial thinnings: Harvests that promote the growth of higher value timber by removing weaker or deformed trees to reduce competition for water, nutrients, and sunlight; and
- Mill residues: Chips, sawdust, and other wood industry by-products.

Do you use the same parts of trees that are used for housing and furniture?
No. The wood we use is not suitable for sawmilling. We use low-grade wood that cannot be refined into lumber (byproducts, diseased or damaged wood, etc.). For decades, the pulp and paper industry has consumed many of the same categories of wood, but because of the decline in demand for paper and widespread closures of pulp and paper plants in the Southeast, the market for this wood has greatly diminished and, in many places, disappeared. As a result, much of this wood would be left in the forest to decompose if it were not used for bioenergy.

Does the industry source wood from wetlands?
In the Southeast, many forests are located in wet areas for one or more seasons of the year. Whenever foresters work in or around such areas, including permanent wetlands, they take extra care by using specialized harvesting equipment and techniques that minimize environmental impacts and protect soil and water quality.

USIPA members are unconditionally committed to ensuring that our activities do not negatively impact water quality or sensitive habitats.

Do you think the laws and regulations around forestry practices in the United States are sufficient?
Yes. The wood pellet industry is governed by the same laws and regulations that have successfully governed wood product industries for decades, and have resulted in increasing forest volumes and some of the most robust forests in the world.

What environmental protections are in place to protect forests?
Sustainability is an integral part of the forest industry in the United States. The U.S. forest industry uses sustainable forestry management practices to maintain healthy forests. Best Management Practices have been established by the U.S. forest industry and have been in place for decades. Bioenergy meets the same standards as every other product coming from U.S. forests.

Additionally, U.S. forests are protected by many internationally-recognized certifications and laws. Federal laws, such as the Clean Water Act, the Clean Air Act, the Endangered Species Act, the Migratory Bird Treaty Act, and the Coastal Zone Management Act, govern forestry practices in woodlands and swamps.

Further protections exist at the state level through water quality and best management practices enforced by state forestry and regulatory agencies. Three major, internationally recognized certification programs operate in the United States: the Forest Stewardship Council (FSC), the Sustainable Forestry Initiative (SFI), and the American Tree Farm System (ATFS).

Where don't you harvest? Is there anything that is off limits?
Yes. We do not source from any site undergoing conversion to a non-forest use, or from any area that is protected by law such as a national park or preserve. We also do not use wood that could be used for solid wood products such as lumber or furniture and will arrange to redistribute any such wood to a sawmill.

Do you source wood from forests that have been clear cut?
While some images of clear-cut forests can be unsettling, this practice is entirely consistent with, and in many cases essential to, sustainable forest management and has been used for many decades in the US South. For shade intolerant species, like pines, poplars, gums, and others, clear cutting is the preferred method of forest management. As cited in multiple academic and scientific reports on best forestry practices for the environment, clear cuts are often the best way to ensure the healthy regeneration of ecosystems. In southeastern wetland forests, a study from North Carolina State University showed that clear cutting often results in greater biodiversity after regeneration than existed before harvest.

Does the industry use whole trees?
Yes, in the form of either young commercial softwood thinnings, which are cut to ensure healthy growth of high-value timber, or in some cases small, diseased or deformed trees that do not meet specifications for sawlogs. In many localities, there is no other market for this wood. Often, what may appear to be a whole tree is actually the top of a tree, which cannot be used to make the high-value wood products for which the trunks have been harvested.

Does the industry use wood from old-growth forests?
Few primary forests exist in the continental United States. By 1981, most of the Eastern Deciduous forests, which include hardwood forests, had been harvested at least once, and many several times over. Given that few, if any, old-growth forests exist, if a private landowner elects to harvest his or her land, it is unlikely that any of it is old-growth forest.

Does the industry use hardwood trees?
Yes, some USIPA member companies do, and some use softwood pine. Hardwoods have been used by forest product industries for decades. Sustainable forest management practices help to ensure productivity and health in hardwood forests, as they do in other types of forest stands.

Could the future growth of your business lead to deforestation?
No, the sustainability of our business is non-negotiable. We do not and will not contribute to deforestation.

American forests are thriving. The total forest area in the United States is within one percent of what it was 100 years ago. During the last 60 years, forest resources have increased by more than 50% in the United States and 94% in the Southeast.

Even when demand for wood has been greatest, American forest inventories have continued to increase. According to the U.S. Forest Service, forest volumes have increased for the past 60 years. The reason is simple, and supported by the data: the more robust the markets for forest products, the more trees landowners grow, replant and re-grow. There is sound statistical evidence showing that healthy forest markets encourage healthy and thriving forests.

It is also important to understand that the wood pellet industry represents a small fraction of forest product demand in the United States. This is true even when taking into consideration recent declines in traditional forest products markets and the significant growth projections for our industry. In 2014, total U.S. wood consumption related to European wood pellet demand represented less than 0.08% of total forest inventory.

How do you know that the forests you source from are sustainably managed?
All of our forestry operations are certified on an ongoing basis for sustainability by the top international forestry organizations, which require annual third-party audits of our supply chain, on top of our own rigorous internal audits of our supplier operations. Sustainability is an essential, non-negotiable part of our business.

What is "carbon debt"?
When wood bioenergy is burned, carbon recently absorbed by the wood is released into the atmosphere. In contrast, fossil fuels like natural gas or coal add to overall levels of CO2 in the atmosphere because the carbon released would have remained underground indefinitely. In sustainably managed forests, new trees re-absorb carbon. In many cases, young trees do this at a faster rate than the older, mature trees they replace. Rotationally harvested forests contain trees of various ages and species, resulting in greater carbon absorption and more stable carbon stocks than unmanaged forests, which often have an oversaturation of mature trees.

Trees are an important defense against climate change. Why shouldn't we simply leave them alone and let them continue to absorb more carbon?
Actively managed forests absorb more carbon than those that are left alone. Carbon is absorbed most quickly by young trees in their growth phase. Carbon absorption rates slow as trees age. Eventually, unmanaged forests can become net carbon emitters if lack of management leads to excessive decay, infestation, or fire.

This helps to explain why, according to the Environmental Protection Agency, sequestration of carbon dioxide by U.S. forests has increased 31% since 1990, during a period of intensive forest products industry activity.

Why do European utilities need pellets from America? Why don't they use wood from European forests?
North America has significantly more forestland than Europe as well as a long history of sustainable forest management and productive commercial forest product industries. The total forest area in the United States is within one percent of what it was 100 years ago. During the last 60 years, forest resources have increased by more than 50% in the United States and 94% in the Southeast.

What is the demand for wood pellets in Europe?
Europe's demand for wood pellets has grown steadily over the last decade. In 2018, the U.S. exported 6 million metric tons of industrial-grade wood pellets to Europe.

Is it true that the European environmental regulations would not permit the types of harvesting that your suppliers employ in America?
No. The Best Management Practices our suppliers are required to employ are consistent and legally compliant with the laws and regulations of the United States and the policy frameworks and sustainability criteria in the European Union.

What is the status of EU sustainability criteria for wood pellets?
EU countries that have bioenergy power generation follow the sustainability criteria that are mandated in the Renewable Energy Directive (RED). In some cases, such as in the United Kingdom, governments have implemented even more stringent sustainability criteria.

If wood bioenergy is such a good solution for Europe, why isn't bioenergy being adopted on the same scale in the United States?
Bioenergy is being adopted in some parts of the United States where supportive renewable energy policies exist. Europe has a cohesive EU-wide policy mandating carbon reduction and encouraging the rapid adoption of renewable energy strategies including bioenergy.

How does it make sense to ship wood pellets all the way across the Atlantic to Europe?
The United States has substantially greater forest resources than Europe, making it an ideal area from which to source pellets. Ocean freight is substantially more carbon and energy efficient on a per ton basis than trucking, which means that shipping long distances makes more sense than trucking over moderate distances.. Transporting freight by ocean uses less than 13% of the energy of transporting the same freight by truck. This means that shipping a ton of pellets from the Southeast to England results in less carbon emissions than transporting that same ton from northern Scotland to England.

What is USIPA?
The US Industrial Pellet Association was formed in February of 2011. USIPA is a not for profit trade organization that promotes safety and sustainability practices within the US renewable wood energy industry, as well as the growth of the overall bioenergy market. USIPA was founded by several industry leaders, including Enviva, Fram Renewable Fuels, Georgia Biomass, and The Westervelt Company.

Who are the members of USIPA?
USIPA is the leading voice of the wood-based bioenergy industry in the United States. Our members represent each area of the supply chain from shipping and transport, to equipment manufacturing, to traders and brokers, to bioenergy producers. A full list of our members can be found on the membership page of our website.