**ENVIRONMENTAL AND HEALTH IMPACTS**

**RESULTING FROM WOOD PELLET PRODUCTION**

*This collection of facts comes from a variety of scientific sources whose authors are listed for further reference.*

**ENVIRONMENTAL IMPACTS**

* Wood pellets are a carbon-intense, destructive and polluting industry (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.).
* “When wood pellets are first processed or chipped in mills, they release heavy amounts of carbon dioxide and harmful pollutants” (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.)
* Wood pellet material sourcing leads to massive deforestation of critical habitats (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.).
* Wood pellets plants are also massive sources of greenhouse gases. The process to produce wood pellets requires high inputs of energy that emit over three million tons of greenhouse gases, like CO2 , further contributing to global climate change (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.).
* “Many climate scientists have refuted the EU’s premise that cutting whole trees to burn for electricity is carbon neutral, especially in a time scale relevant to fighting the worst impacts of climate change...Recent reports document the wood bioenergy industry’s adverse impacts on southern forests as well as its role in causing global climate change” (Environmental Integrity Project, 2018).
* “EIP’s survey reveals that these facilities emit dangerous amounts of air pollution, and further finds that state agencies consistently fall well short of their duty to ensure that these facilities control their pollution to the levels required by law, frequently due to misleading information supplied by the industry. As a result, many large pellet mills have been allowed to emit air pollution, especially volatile organic compounds (VOCs) and hazardous air pollutants at levels well above legal limits for years at a time” (Environmental Integrity Project, 2018).
* A main source of pollution “is the drying process, as burning wood emits substantial amounts of fine particulate matter, carbon monoxide, nitrogen oxides, and greenhouse gases” (Environmental Integrity Project, 2018).
* “Green wood (that is, wood before it has been dried) contains significant amounts of volatile organic compounds (VOCs), and applying heat or mechanical energy to the wood releases the VOCs into the air. Once in the atmosphere, VOCs combine with sunlight to produce ground-level ozone, a major constituent of smog...In addition to the ozone risk, VOC emissions from wood pellet mills also contain numerous individual pollutants which are classified by the EPA as hazardous air pollutants, such as acetaldehyde, formaldehyde, and methanol” (Environmental Integrity Project, 2018).
* “The burning of biomass fuels is one of the most important sources of air pollutants, including emissions of CO, volatile organic carbons, particulate matter (PM), black carbon, and polycyclic aromatic hydrocarbons (PAHs).(4-6) These emissions not only cause severe indoor air pollution...but also contribute to regional and even global air pollution and climate forcing” (Shen, et al., 2012).

**HEALTH IMPACTS**

* Pellet production facilities release dangerous air pollutants including particulate matter and volatile organic compounds, putting surrounding communities at higher risk for health complications (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.).
* “The processing and burning of wood pellets creates, Volatile Organic Compounds (VOCs), particulate matter (PM), nitrogen oxides (NO), and carbon monoxide, all of which are detrimental to human health” (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.)
* “Risk from air-borne pollutants which can cause or worsen cardiovascular and respiratory issues and cancers. Long-term exposure to many of these pollutants, especially acetaldehyde, formaldehyde and methanol can also cause chronic symptoms and harm early child development” (Wisner, A., Musil, R.K., Tiwari, S., Sung, S., & McAulif, W., n.d.) .
* “Multiple lines of evidence suggest that short-term exposure to elevated levels of biomass combustion products could increase the risk of respiratory-related health impacts” and, for a limited number of species, a potential carcinogen (Rohr, et al., 2015).
* Wood pellet manufacturing  creates “high levels of air pollution—such as soot and volatile organic compounds...pollution which can lead to a wide array of health and environmental problems” (Environmental Integrity Project, 2018).
* “PM2.5 consists of airborne particles less than 2.5 micrometers which can pass deep into a person’s lungs and even into the bloodstream, causing heart attacks, decreased lung function, worsening asthma symptoms, and premature death...Many wood pellet mills frequently emit 60 to 80 tons per year of PM2.5, even after installing controls” (Environmental Integrity Project, 2018).
* Breathing ozone created by the wood pellet facilities “can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases such as asthma” (Environmental Integrity Project, 2018).