

Seneca and other biomass plants emit a combination of direct and indirect greenhouse gases. Direct greenhouse gases absorb heat radiation directly contributing to global warming, while indirect greenhouse gases contribute to the formation of direct greenhouse gases and lengthen their atmospheric lifetimes.

The direct greenhouse gases emitted by Seneca are carbon dioxide, nitrous oxide, and methane. Many tout biomass power plants' contributions of carbon dioxide as neutral, but this does not hold true if the plants use fresh timber. Cutting down standing trees transforms a carbon sink to a carbon source, and the carbon will not be recaptured for at least 30-60 years. The Seneca biomass plant has not guaranteed they will not burn fresh timber. Additionally, all the operations required to produce fresh timber and bring woody debris to biomass power plants are run off of fossil fuels adding more CO<sub>2</sub> to the atmosphere. The Kyoto Protocol recognizes the contributions of deforestation to climate change and requires the carbon contributions from forestry practices to be reported, although we choose to ignore this here. The other direct greenhouse gases emitted by Seneca are even more potent than carbon dioxide: nitrous oxide is 296 times more powerful and methane is 20 times stronger.

Seneca will also release carbon monoxide, non-methane volatile organic compounds and NO<sub>x</sub> all of which are indirect greenhouse gases in addition to being serious health threats. NMVOCs and NO<sub>x</sub> combine in the presence of sunlight to form ground-level ozone, a direct greenhouse gas. Carbon monoxide contributes to global warming by lengthening the lifetime of methane and ground-level ozone, and by its eventual transformation into carbon dioxide.

Together these direct and indirect greenhouse gases work to increase global climate change. Putting a positive spin on biomass energy deflects attention away from the negative climatic and health impacts it has and the overarching need for our society to reduce our impact on the climate system and the earth as a whole. Burning and incineration are old, polluting practices that take us in the wrong direction in the quest for truly “green” and renewable energy.