

How Green Are Biomass Stoves and Furnaces?

With respect to the Renewable Star Action: *Use efficient furnace and stoves designed for biomass fuels*, opinions differ on how “green” biomass stoves and furnaces are. Here is a list of pros and cons to consider ([Source](#)).

The Pros:

- **Renewable**: Biomass is a renewable fuel that does not release “new carbon” into the atmosphere like combusted fossil fuels do. This is a significant advantage.
- **Waste Avoidance**: If you are heating with regionally generated biomass, you also avoid the waste associated with fuel transportation or electricity travelling through the grid.
- **Environmental Impacts**: Biomass does not have the negative environmental costs associated with coal mining, oil and gas production, and transportation of fossil fuels around the nation.
- **Energy Storing**: Unlike other renewable energy sources, such as wind and solar, biomass fuels can be stored and used to produce energy when needed.
- **Cost**. The prices of biomass fuels are comparable to and in many cases cheaper than other fossil fuels, such as oil, electricity, kerosene or propane. Therefore, there is no need for subsidies which is an issue of debate with solar and wind energy production.
- **Energy Independence**: The use of biomass can help reduce dependency on fossil fuel imports.

The Cons:

- **Particulate Pollution**: Burning wood does produce more particulate pollution than burning oil.
- **Emissions**: CO₂ emissions from burning wood or wood pellets are higher than the CO₂ emissions from burning oil, gas or coal. In addition, the production of biomass energy also causes the release of nitrous oxide (N₂O) and methane (CH₄) that cannot be reabsorbed by simply replanting the biological material. While leaving wood to decay in forests also produces greenhouse gas emissions, it does so over a long period of time, whereas burning wood releases carbon emissions all at one time.
- **Replacement Time**: It takes far longer for a replacement tree to grow to maturity and recapture carbon emissions, than it does to burn an existing tree and release emissions.
- **Storage**: Warehouses needed for storing biomass fuels can add significant production costs.

More information and emissions comparisons are available on the Union of Concerned Scientists [All about Biomass webpage](#).