



Downdraft Biomass Gasification

At Aries Clean Technologies, we have solved the challenge of scaling up the size of Downdraft Gasification units. Our patented designs have allowed us to build the world's largest Downdraft Gasifier, with corresponding throughput increases, better economies of scale, and dramatically improved financial returns over older technologies. Our Downdraft Gasifier, designed for wood waste and alternative feedstock, reduces biomass volume by up to 85%.



Feedstocks

- Wood, cardboard and paper
- Food manufacturing, processing, and other biomass food waste
- Biosolids from municipal or industrial wastewater systems
- Agricultural crops and animal residues

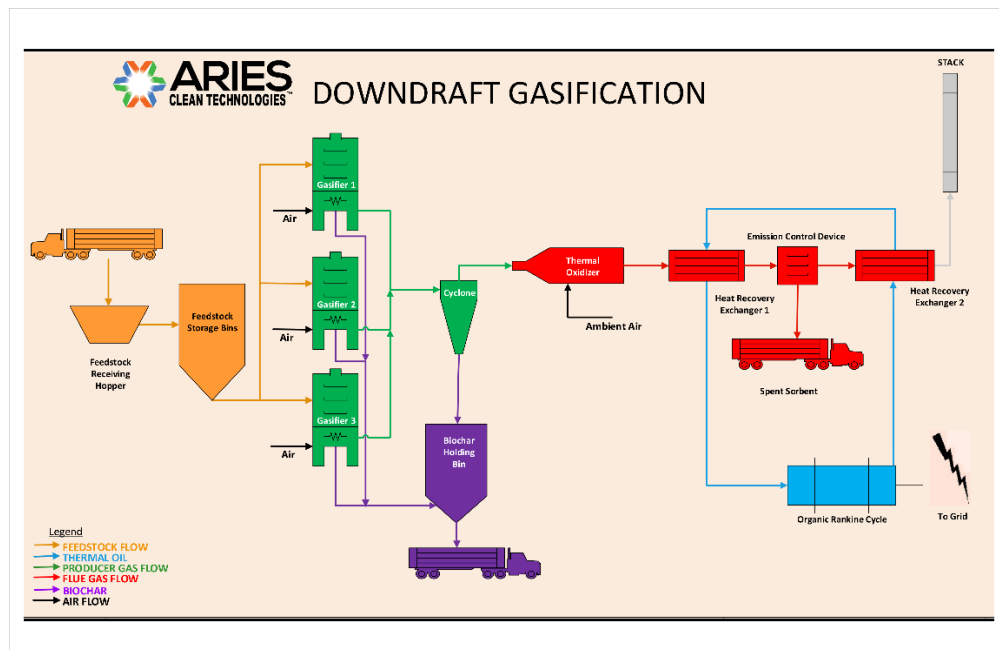
Beneficial Byproducts

- Clean energy – syngas, a synthetic fuel gas for thermal, electrical or co-heat and power production, and
- High-value biochar – Aries GREEN™ biochar is currently sold as a soil conditioner through Amazon and The Home Depot.



Sustainability Benefits

- Achieving zero landfill goals for industry and helping municipalities conserve/extend the life of their landfill facilities, thus negating the need to site new landfills.
- Reducing carbon footprints. New green energy production measurably offsets former use of fossil fuels. Locating gasifiers near the sources of feedstocks reduces feedstock trucking distances, which contributes to reducing CO₂ by thousands of tons per year. These carbon and greenhouse gas reductions are calculated using EPA standards.



Energy Applications

The synthetic fuel gas that is produced in the thermal-chemical reaction is clean-burning and very combustible, producing an emissions signature that is similar to natural gas. This gas is being utilized in the following applications:

- Electricity – Internal Combustion Engines / Organic Rankine Cycle Generators
- Steam – Fueling Boilers in Community Heating Systems
- Direct Thermal – Kiln Operations; Sludge Dryers
- Combustion – Industrial Thermal Oxidizers

Financial Benefits

- Disposal cost reductions and offsets, including tipping fees and transportation costs.
- Compliance with government regulations and avoidance of fines imposed for non-compliant disposal practices.
- Energy production (electrical or thermal) and its offset of current costs, as well as additional monetary value of utilizing sustainable/renewable power.