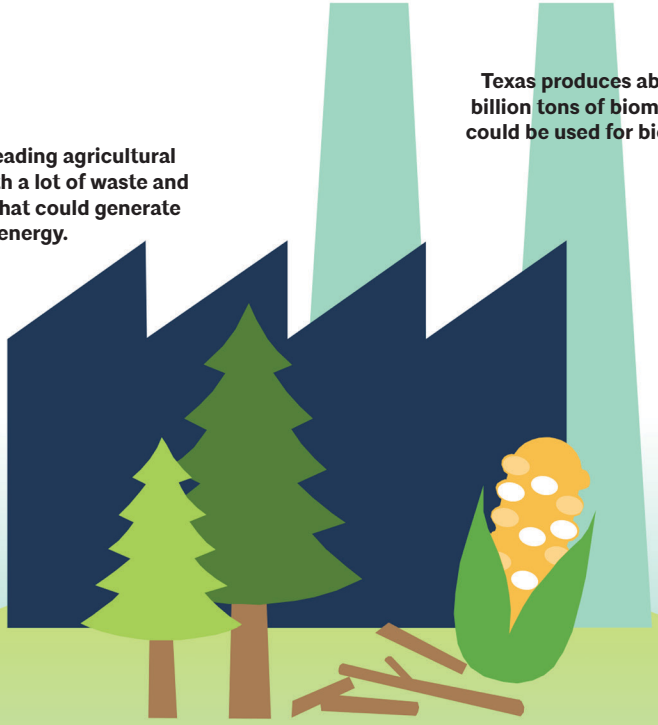
BIOMASS ENERGY

Biomass Energy is the burning of plant and animal waste to convert heat into electricity and biofuels.

Biomass energy can be used as electricity, heat for interior spaces, or as biofuels to power vehicles and appliances.

Texas produces about 20 billion tons of biomass that could be used for bioenergy.

Texas is a leading agricultural producer with a lot of waste and byproduct that could generate energy.



PROS & CONS

PRO:
Use local waste as fuel

PRO:
Supports agriculture industry and rural economies

PRO:
Improve energy efficiency by up to 80%

PRO:
Ash waste from the bio-energy process can be recycled into fertilizer

CON:
Solids require handling and storage

CON:
Process requires a lot of water

CON:
Process releases carbon, but less than fossil fuels

BIOMASS ENERGY EXAMPLES

Renewable energy is a great solution for structures with a life span of 50+ years where the owner will see a return on utility savings. These structures can range from a suburb home, to a school, to a large commercial space.

HOTCHKISS BIOMASS POWER PLANT

A biomass facility that burns sustainably harvested woodchips heats the Hotchkiss School which consists of 85 buildings that total 1.2 million square feet in Connecticut. The ash left from burning is collected for use as fertilizer for vegetable gardens tended by the students.

HARTFORD CENTRAL SCHOOL DISTRICT

The school's gasifier in New York consumes up to 36 tons of wood chips per week in cold weather to heat the building. The school used to pay $110,000 a year for heating oil but now plans to spend $40,000 for wood chips.

MORRIS BIOMASS RESEARCH AND DEMONSTRATION FACILITY

The Minnesota facility provides 80% of the campus cooling and heating needs, working toward the goal of self-sufficiency. The process uses agricultural residue like wheat straw and wood waste as fuel.

Resources

City of Dallas Climate Action Plan:
dallasclimateaction.com

American Institute of Architects 2030 Commitment:
aia.org/resources/202041-the-2030-commitment

ASHRAE Advanced Energy Design Guides:
ashrae.org/technical-resources/aedgs

State Energy Conservation Office:
comptroller.texas.gov/programs/seco

National Renewable Energy Laboratory:
nrel.gov/research/re-biomass.html

US Energy Information Administration:
eia.gov/energyexplained/biomass

Examples:
archdaily.com/340641/hotchkiss-biomass-power-plant-centerbrook-architects-and-planners?ad_source=search&ad_medium=search_result_all

architectmagazine.com/technologybiomass-boilers-are-on-the-rise_o

morrismodel.org/renewable-energy-and-compost

Connecting sustainable design and community leadership

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