

BIOENERGY RESEARCH & DEMONSTRATION FACILITY

CARBON CYCLE

CARBON-NEUTRAL CYCLE

- The biomass heat generation system in the BRDF uses wood waste from wood manufacturing and municipal trimmings as a renewable source of biomass.
- This system is carbon neutral since the amount of carbon dioxide released by the wood waste when used as fuel is the same as would be released during decomposition in a landfill but with the benefit of producing thermal energy.
- The use of biomass reduces the need for fossil fuels to produce thermal energy for UBC campus buildings. Fossil fuel combustion releases carbon dioxide from the ground into the atmosphere contributing to an atmospheric carbon imbalance.

BRDF DIVERTS...

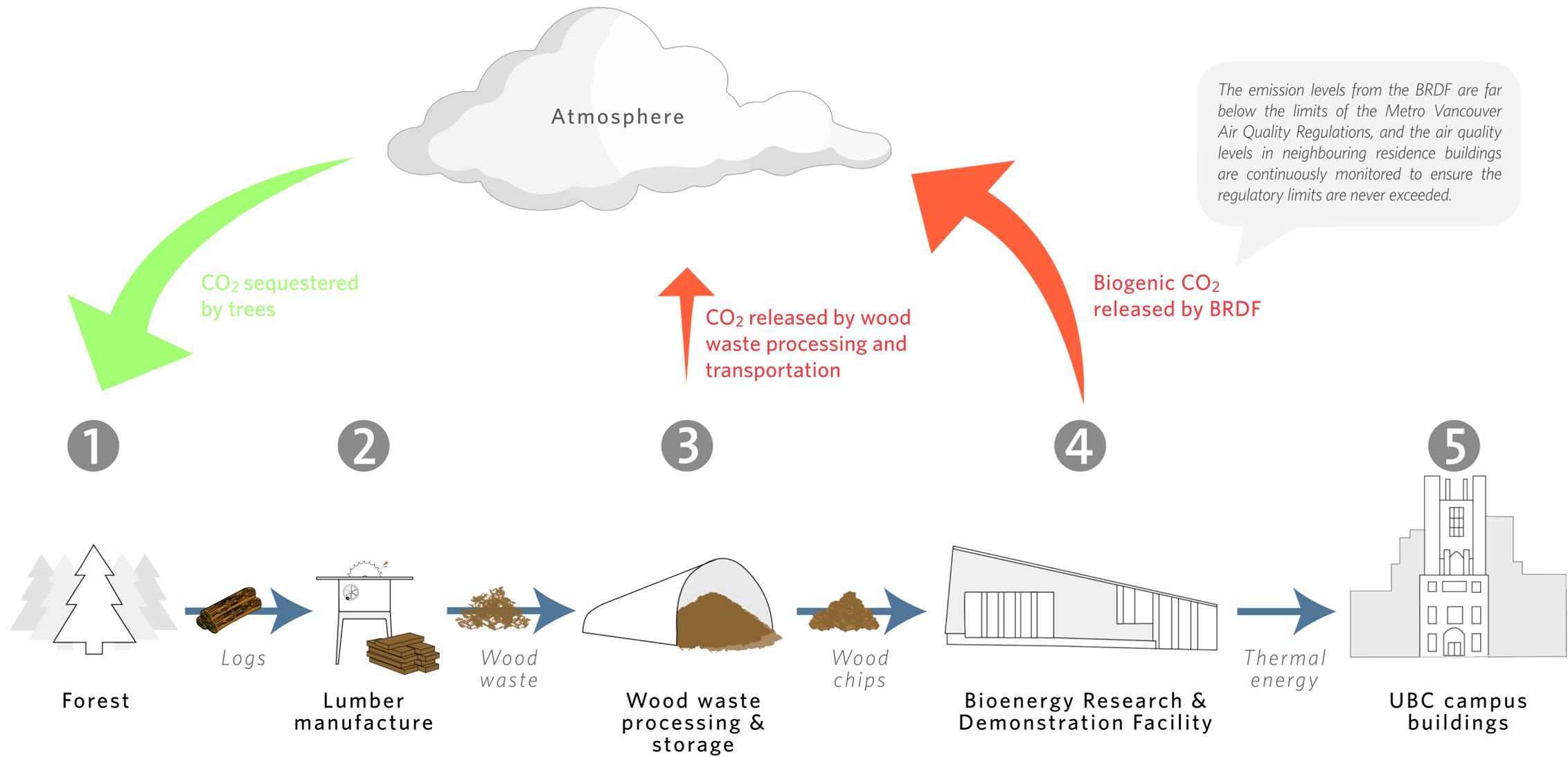
10,000 tonnes of wood waste from the landfill each year to be used as biofuel

BRDF DISPLACES...

8,500 tonnes of emitted fossil fuel-based CO₂ each year

BRDF REDUCES...

14% of total campus annual GHG emissions compared to 2007 levels



The emission levels from the BRDF are far below the limits of the Metro Vancouver Air Quality Regulations, and the air quality levels in neighbouring residence buildings are continuously monitored to ensure the regulatory limits are never exceeded.

1 FOREST GROWTH

Trees absorb on average 200 kg of CO₂ from the atmosphere over an 80-year life span. Forest trees are harvested in the form of logs.

2 LUMBER MANUFACTURING

Harvested logs are processed for lumber to be used in construction and furniture manufacturing, which creates waste wood and sawdust by-products.

3 WOOD WASTE PROCESSING

The clean wood waste from sawmills is collected and processed into wood chips to be used as biofuel, instead of being sent to a landfill.

4 BIOENERGY PRODUCTION

The wood chips are transported to BRDF at the UBC campus to fuel the biomass heat generation system and produce thermal energy.

5 THERMAL ENERGY DISTRIBUTION

Thermal energy in the form of steam is converted into hot water, which is then distributed around the UBC campus to heat the buildings.