



Biorefinery Biomass Demand Examples

100 million gallon (378 million litre) per year corn grain ethanol plant	Steam demand	350,000 lb/hr (159,000 kg/hr)
	Power demand	15 MW
	Normal fuel	natural gas, coal, oil
	Biomass gasifier & syngas conversion system added to project to provide all steam and power for the complex	
	Biomass fuel	corn stover
	Biomass demand	840,000 dry tons/year
	Added products	
	Liquid cellulosic biofuel	1,085,000 bbls/year
	Export power	20 MW
Grain ethanol processing is now truly enviro-friendly - i.e. carbon neutral.		

1000 ton/day integrated pulp and paper mill	Process steam demand	500,000 lb/hr (227,000 kg/hr)
	Power demand	20 MW
	Lime kiln demand	90 MM BTU/hr
	Normal fuel	black liquor, natural gas, coal, oil
	Biomass gasifier & syngas catalytic conversion system added for black liquor recovery and to provide all steam and power for the complex	
	Biomass fuel	waste wood, agricultural residues
	Biomass demand	1,540,000 dry tons/year
	Added products	
	Liquid cellulosic biofuel	2,195,000 bbls/year
	Pulp and paper processing is now truly enviro-friendly - i.e. carbon neutral.	



Biorefinery Biomass Demand Examples

200,000 mt/year integrated corn stalks fine paper mill	Paper production	200,000 mt/year
	Corn stalks pulp production	100,000 bdmt/year
	Corn stalk raw material	300,000 mt/year
	Normal fuel	black liquor, natural gas, coal, oil
	Biomass gasifier & syngas catalytic conversion system added for black liquor recovery and to provide all steam and power for the complex	
	Biomass fuel	corn stalks
	Biomass demand	680,000 dry tons/year
	Added products	
	Liquid cellulosic biofuel	819,000 bbls/year
	Pulp and paper processing is now truly enviro-friendly - i.e. carbon neutral.	

35 MW combined cycle power plant based on biomass gasification	Biomass demand	245,000 - 263,000 wet tons/year
	Biomass fuel	waste wood, agricultural residues
	Produces green power - i.e. carbon neutral.	

225 million litre/year cellulosic ethanol plant using enzymatic hydrolysis of biomass	Biomass demand	750,000 mt/year
	Biomass used	wheat straw
	Produces green ethanol - i.e. carbon neutral	