

Contact information or General information source	Facility name	Facility state or country	Biomass fuel options	Process category
Emission Factors for Priority Biofuels in Minnesota Report	Alabama Power Company - Plant Gadsden	AL	switchgrass	Boiler
Emission Factors for Priority Biofuels in Minnesota Report	Southern Company and Southern Research Intitute	AL	switchgrass co-milling of switchgrass, 15% overfire air co-milling of switchgrass, no overfire air direct injection of switchgrass, no overfire air	Boiler
http://www.lacity.org/council/cd12/renewla/cd12renewla243134399_12192005.pdf	BRI Energy, LLC and Bioeneginering Resources, INC Gasification-Fermentation Piolot Facility	AR	wood, corn stover, tires, RDF, Material source-separated biodegradable waste	
http://www.adeq.state.ar.us/home/pds/sql/pds.asp#display	Del Tin Fiber	AR	biomass fuel, which is bark, sawdust, sander sust, chips, crosstie chips, and other residual wood materials	Gasifier
http://www.adeq.state.ar.us/home/pds/sql/pds.asp#display	Rineco	AR	syn gas from hazardous waste	Gasifier
http://www.adeq.state.ar.us/home/pds/sql/pds.asp#display	Anthony-higgs Lumber Company, Inc.	AR	milling wood wastes	Gasifier
http://www.adeq.state.ar.us/home/pds/sql/pds.asp#display	Riceland Foods, Inc/Riviana Foods, Inc.	AR	rice hulls	Gasifier
http://www.gasification.org/Docs/1998_Papers/gtc9819s.pdf	Pols	Austria	tree bark	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Brazilian BIGCC Plant	Brazil	biomass	Gasifier
San Joaquin Valley Air Pollution Control District	Thermal Energy Dev Partnership LP	CA	agricultural waste, No chemically treated wood products including painted or oil stained material other than pesticide sprayed agricultural waste shall be used as fuel, No putrescible material shall be received at this facility and/or combusted in the boiler	Boiler
San Joaquin Valley Air Pollution	AES Delano Inc	CA	"Biomass" means any organic material not derived	Boiler

Control District			<p>from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes. Contamination of the biomass fuel, as delivered to the boiler, shall not exceed 0.04% by weight plastics or 0.62% by weight total of the following materials: metals, plastics, paper, painted wood, particle board, wood treated with preservatives, and non-wood roofing materials (except asbestos).</p>	
San Joaquin Valley Air Pollution Control District	AES Delano Inc	CA	<p>"Biomass" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removal, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Biomass does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid</p>	Boiler

			<p>waste. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes.</p> <p>Contamination of the biomass fuel, as delivered to the boiler, shall not exceed 0.04% by weight plastics or 0.62% by weight total of the following materials: metals, plastics, paper, painted wood, particle board, wood treated with preservatives, and non-wood roofing materials (except asbestos).</p>	
San Joaquin Valley Air Pollution Control District	Sierra Power Corp	CA	<p>sawmill/forest residue (consisting of sawdust, bark, chips, shavings, and clean dry construction wood waste), almond and walnut shells, peach and olive pits, vineyard prunings, and orchard prunings or chips. No plastic, rubber, tar paper, asphalt shingles, plaster, metals, painted or chemically treated wood products or wastes shall be burned in combustor.</p>	
San Joaquin Valley Air Pollution Control District	Nordman of California	CA	<p>pumace, sawdust, walnut shells, and pistachio shells</p>	Gasifier and Boiler
http://www.energy.ca.gov/pier/final_project_reports/CEC-500-2005-134.html	University of California, Dept. of Biological and Agricultural Engineering	CA	<p>almond shell, walnut prunings, rice straw, whole tree wood chips, sludge, and non-recyclable waste paper</p>	Gasifier
San Joaquin Valley Air Control District Northern Regional Office (209) 557-6400	Aes Mendota, LP	CA	<p>saw mill residues (bark, sawdust, chips, and shavings); forest residues; orchard and vineyard prunings including chipped whole tree wastes and materials listed in the attachment "Open Burn Emission Factors"; clean unpainted urban wood waste; unpainted paper waste; nut shells; stone fruit pits; onion and garlic skins;</p>	Gotaverken single drum boiler
DRAFT San	Merced Power, LLC	CA	<p>almond Prunings, Apple</p>	Bubbling

<p>Joaquin Valley Air Control District Northern Regional Office (209) 557-6400</p>			<p>Prunings, Apricot Prunings of: Almond, Apple, Apricot, Cherry, Citrus, Fig, Generic Orchard, Grape, Nectarine, Olive, Peach, Pecan, Pistachio, Plum, Walnut. Cedar Bark, Forest Slash/Cull, Hog Fuel (mill Residue), wood sawdust, construction wood waste, landfill derived wood, landscape tree trimmings, pallet/bins wood, urban development clearing trees. Pomace: grape, olive, raisin, tomato, cherry. Pits: cherry, citrus, nectarine, olive, peach, prune. Shells: almond, peanut, pecan, pistachio, walnut, cotton. ,Coffee grounds, cotton gin trash, turkey (wood) shavings, ditchbank or canal weeds, tumbleweeds. Straw of: alfalfa, barley, bean, rice, wheat. Corn stalks, milo sorghum, char. Urban wood waste (construction and landfill derived wood wastes) is approved as fuel provided the mixed urban wood waste fuel contains less than 1% by weight, of plastic, rubber, metals, roofing felt paper, and other non-wood contaminants (other than dirt or ash). No asbestos-containing materials are approved as fuel.</p>	<p>Fluidized Bed Combustor</p>
<p>San Joaquin Valley Air Pollution Control District</p>	<p>Rio Bravo Fresno</p>	<p>CA</p>	<p>alfalfa, barley, beanstraw, corn, orchard prunings, vineyard prunings, oats, wheat, and forest residues, (offset creditable fuels) grape stems, grape pumice, almond shells, walnut shells, construction wood waste, urban wood waste, and up to 1,500 lb/quarter of confiscated drugs (non-credible). Fuels shall not be painted, oiled or stained. The mass ratio of creditable biomass fuel to total biomass fuel shall not be less than</p>	<p>Boiler</p>

			0.48.	
Emission Factors for Priority Biofuels in Minnesota Report	Technical University of Denmark	Denmark	wheat H-1	Boiler
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Varkaus ACFBG Plant	Finland	packaging wastes	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html ; www.gasification.org/Docs/1999_papers/GTC99280.pdf	Kymijärvi ACFBG Plant	Finland	biofuels, saw dust, wood residues (bark, wood chips, wet and fresh wood residues, dry wood residues from the wood working industry (plywood, particle board, cuttings), recycled fuel (REF).	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Pietarsaari ACFBG Unit	Finland	biofuels	Gasifier
http://www.georgiaair.org/airpermit/permits/3130001/tv15742/3130001final.pdf	Shaw Industries, Plant 81	GA	carpet (~65% after removal of inorganics) and wood flour ~35%	Gasifier
http://www.georgiaair.org/airpermit/permits/2470037/tv16655/2470037final.pdf	Visy Paper, Inc.	GA	paper sludge, heavy rejects, dry scrap construction wood, tire-derived fuel, carpet remnants, and other fuels compatible with the design of the gasifier. Shall not burn more than 3% sulfur by weight, unless the sulfur dioxide abatement equipment is in operation.	Gasifier
http://www.icheme.org/literature/conferences/gasi/Gasification%20Conf%20Papers/Session%202%20presentation-Greil%20et%20al.pdf	Schwarze Pumpe Secondary raw material utilization centre	Germany	residues of plant, contaminated wood, household wastes, solid wastes such as plastics, sewage sludge, rubber, fluff	Gasifier
http://www.gasification.org/Docs/1998_Papers/gtc9819s.pdf	Rudersdorf	Germany	wood rejects, RDF, lignite ash, paper rejects	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/	Fuel Gas Plant	Germany	biomass, Wastes, Carbon ash	Gasifier

on/database/datab ase.html				
<a href="http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab
ase.html">http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab ase.html	Schwarze Pumpe Power/Methanol Plant	Germany	household waste, Bit. coal	Gasifier
<a href="http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab
ase.html">http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab ase.html	Fondotoce Gasification Plant	Germany	MSW	Gasifier
<a href="http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab
ase.html">http://www.netl.doe.gov/technologies/coalpower/gasification/database/datab ase.html	Schwarze Pumpe Power/Methanol Plant	Germany	biomass/Waste	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	Munich Univ or Technology, Research Ctr of Ag Eng.	Germany	hay (set aside land)	Boiler
Emission Factors for Priority Biofuels in Minnesota Report	University of Stuttgart	Germany	wood residue	Other
Emission Factors for Priority Biofuels in Minnesota Report	Sumner Municipal Utilities	IA	biodiesel w/out additives	
http://www.cvr.cd.org/ResearchPapers/2002final-report/NREL%20draft%20report.pdf	Chariton Valley - Ottumwa Generating Station	IA	switchgrass	Boiler
	University of Iowa Power Plant	IA	oat Hulls	
Cedar Falls Utilities	Cedar Falls Utilities	IA	oats Switchgrass	Boiler
http://www.cvr.cd.org/ResearchPapers/evaluation_paper.htm	Iowa State University	IA	switchgrass shelled corn	Gasifier
Permit application University of MN Morris	Coaltec Energy Carterville Illinois demonstration	IL	corn stover and ethanol mash	Gasifier
http://www.gastechology.org/webroot/app/xn/xd.aspx?it=enweb&xd=1researchcap\1_8gasificationandgasprocessing\1_8_2_labsfacilities\gasificationlaboratories.xml#gasific	Gas Technology Institute Flex-Fuel Test Facility	IL	biomass	Gasifier

ation				
http://www.gasification.org/Docs/1998_Papers/gtc9819s.pdf	Bioelectrica	Italy	SRF, wood	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	Univ of Padova	Italy	biodiesel	Boiler
http://www.air.ky.gov/NR/rdonlyres/AE07E00B-DBD1-448B-BC86-C93CADB72231/0/S06330Final120206.pdf	SCL Carbon	KY		Gasifier
http://www.maine.gov/dep/air/licensing/Ch115Licenses/A001MR.pdf	Hancock Lumber Company, Inc	ME	wood waste	Gasifier
http://www.nrel.gov/docs/fy05osti/37581.pdf	Pearson facility	MS	rice straw, wood	Gasifier
http://deq.mt.gov/AirQuality/ARM_Permits/3829-00.pdf	University of Montana Western Dillon	MT	wood-chip	Gasifier
Presentation Fourth Biomass Conference of the Americas Aug 29-Sept 1999	Marine Corps Base at Camp Lejeune	NC	wood residues	Gasifier
http://www.gasification.org/Docs/1998_Papers/gtc9819s.pdf	NV EPZ	Netherlands	waste wood	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Americentrale Fuel Gas Plant	Netherlands	demolition wood waste	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	Norwegian Institute of Technology	Norway	demolition wood	Boiler
Emission Factors for Priority Biofuels in Minnesota Report	Penn State Energy Institute - Pilot Combustion Testing	PA		boiler
Emission Factors for Priority Biofuels in Minnesota Report	Penn State Energy Institute - Pilot Combustion Testing	PA		boiler

http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Rodao ACFBG Unit	Portugal	bark	Gasifier
http://www.scdhec.gov/environment/baq/biomass.aspx	University of South Carolina Environmental Health & Safety	SC	untreated wood waste	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	South Dakota Soybean Processors	SD	biodiesel w/out additives	Boiler
www.gasification.org/Docs/1999_papers/GTC99290.pdf	Varnamo Biomass Gasification Plant	Sweden	wood chips, forest residue (bark, branches), straw, refuse derived fuels, willow (salix), saw dust and bark pellets	Gasifier
http://www.netl.doe.gov/technologies/coalpower/gasification/database/database.html	Norrsundet ACFBG Unit	Sweden	bark	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	University of Umea	Sweden	packaging material MSW pellets	Pilot reactor
Emission Factors for Priority Biofuels in Minnesota Report	Lund University	Sweden	sawdust	Boiler
Emission Factors for Priority Biofuels in Minnesota Report	National Cheng Kung University	Taiwan	palm biodiesel	Other
Emission Factors for Priority Biofuels in Minnesota Report	TAMU	TX	switchgrass	Other
http://www.gasification.org/Docs/1998_Papers/gtc9819s.pdf	Yorkshire	UK	willow	Gasifier
http://www.deq.state.va.us/air/pdf/titlevpermits/11012tvmod.pdf	Galax Energy Concepts, LLC	VA	wood no more than 3.34 tons/hr each and combined total of no more than 67,000 tons/yr excludes any wood which contains chemical treatments or has affixed thereto paint and/or finishing materials or paper or plastic laminates	Gasifier
State of Vermont Department of	Waterbury State Office Complex	VT	Biodiesel w/out additives	

Buildings and General Services.				
http://www.anr.state.vt.us/air/Permitting/PermitsTAs/01008permit.pdf	Veneer Manufacturing Facility	VT	natural wood, sawdust and other wood waste generated by wood processing operations	Gasifier
http://www.anr.state.vt.us/air/Permitting/PermitsTAs/01057permit.pdf	Joseph C. McNeil Generating Station	VT	wood	Gasifier
Emission Factors for Priority Biofuels in Minnesota Report	Madison Gas & Electric Company Blount St. Station	WI	switchgrass	Boiler
Accent Home & Kitchen Center Inc	MN	wood	Accent Home & Kitchen Center Inc	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Accent Home & Kitchen Center Inc	MN	wood	
http://www.pca.state.mn.us/air/permits/issued/index.html	Ainsworth Engineered (USA) LLC	MN	dry wood fuel	Dryer
http://www.pca.state.mn.us/air/permits/issued/index.html	Allete/Minnesota Power & the City of Duluth	MN	wood chips including railroad ties	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Alltrista Consumer Products Company, Hearthmark, Cloquet wood project	MN	wood, wood waste, bark, non-hazardous plant refuse	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Blandin Paper Company	MN	wood waste including railroad ties, on-site generated waste	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Boise White Paper, LLC - International Falls	MN	wood bark, wastewater treatment sludge, paper, black liquor	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Central Minnesota Ethanol Co-op	MN	wood DDG	Gasifier

http://www.pca.state.mn.us/air/permits/issued/index.html	Chippewa Valley Ethanol Co LLLP Glacial Plains Cooperative (GPC)	MN	biodiesel w/out additives, clean wood, sugar beet residue, corn stover, oat hulls, wheat straw, switchgrass, dry distillers' grains with solubles, and other plant-based residue and by-products.	Gasifier
http://www.pca.state.mn.us/air/permits/issued/index.html	Corn Plus, Inc.	MN	distillers syrup	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Crystal Cabinet Works Inc	MN	wood waste	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Distinctive Floral Co - Len Busch Roses	MN	wood	
http://www.pca.state.mn.us/air/permits/issued/index.html	District Energy St. Paul, Inc.- Hans O Nyman	MN	wood chips	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Endres Processing LLC	MN	sawdust RDF (packaging material)	Dryer
http://www.pca.state.mn.us/air/permits/issued/index.html	Fibrominn LLC	MN	poultry litter, other biomass*	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Georgia-Pacific Corporation	MN	wood waste, wood sugar molasses	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Hedstrom Lumber Co. Inc. - Grand Marais	MN	wood waste	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Hibbing Public Utilities Commission	MN	Wood, oily cellulose-based sorbents,	Boiler

http://www.pca.state.mn.us/air/permits/issued/index.html	Hill Wood Products	MN	wood waste (defined Minn. R. 7011.1201, subp. 48)	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	ILevel By Weyerhaeuser	MN	landfill gas, hog fuel (bark, wood, trims and dust), on site generated adsorbent materials	Dryer
http://www.pca.state.mn.us/air/permits/issued/index.html	ISD 146 - Barnesville High School	MN	wood	
http://www.pca.state.mn.us/air/permits/issued/index.html	ISD 432 - Mahnomon Public School	MN	wood	
http://www.pca.state.mn.us/air/permits/issued/index.html	Koda Energy LLC (Rahr Malting)	MN	fuel use limited to natural gas, untreated wood, oat hulls, malt and grain by-products, and any other biomass fuels/blends tested and approved. Untreated wood is defined as any wood that has not been subject to any chemical treatment or coating. Biomass includes portions of or all of various vegetation, including trees, untreated wood, oat hulls, malts and grain by-products, energy crops (such as switchgrass), etc.	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Louisiana-Pacific Corp - Two Harbors	MN	wood waste Fuels Allowed: the Permittee shall only combust the following fuels in EU 002: wood waste (which may include material from the blending system, solids from the drying system removed by CE 001, board trim, and wood fiber from press plate cleaning), on-site generated waste (which may include waste latex paint, used oil, cardboard and paper waste, soiled rags, and combustible absorbent materials from oil, anti-freeze, water-based paint, and water or soy based ink spills). Incremental	Boiler

			addition of on-site generated waste fuels shall be done such that combustion conditions are not upset.	
http://www.pca.state.mn.us/air/permits/issued/index.html	Marvin Windows & Doors	MN	wood	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Norbord USA Inc c/o Norbord Minnesota	MN	hog fuel, cellulose based sorbents and alternate biomass	Burner
http://www.pca.state.mn.us/air/permits/issued/index.html	Northern States Power Co Xcel Energy Allan S. King	MN	timber Residues	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Northome Energy/Itasca Power	MN	waste wood	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	POLY FOAM, INC.	MN	oak wood chips	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Potlatch Forest Products Corp Lumbermill	MN	wood waste 1% manufacturing residue & absorbent material	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	Sappi Cloquet LLC	MN	wood, mill waste, wastewater plant sludge	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	St Gabriel's Hospital	MN	wood	
http://www.pca.state.mn.us/air/permits/issued/index.html	The Virginia Public Utilities Commission	MN	wood	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	University of Minnesota and Foster Wheeler	MN	wood chips, oats hulls	Boiler

http://www.pca.state.mn.us/air/permits/issued/index.html	University of Minnesota at Morris	MN	wood, corn stover, other agricultural-based fuels	Gasifier
http://www.pca.state.mn.us/air/permits/issued/index.html	University of Minnesota Twin Cities Southeast Heat	MN	oats hulls	Boiler
http://www.pca.state.mn.us/air/permits/issued/index.html	US Steel Minnesota Ore Operations (Minntac)	MN	wood, oat hulls, corn	Kiln burner
http://www.pca.state.mn.us/air/permits/issued/index.html	Verso Paper Co- International Paper - Sartell	MN	wood sludge, tire derived fuel, bark	Boiler