

Global Suppliers Directory 2017

This is the 10th annual update of Bioenergy International Global Suppliers Directory, presenting over 450 international suppliers of equipment to the bioenergy sector.

THE PURPOSE IS TO PROVIDE AN OVERVIEW and some pointers on who supplies what. To qualify companies have to be engaged in export and/or have subsidiaries in other regions, the country shown is where it is headquartered. Although comprehensive, the directory is not exhaustive neither is it an endorsement. Note that the directory does not include equipment for the small scale heating sector. For reference and reading purposes we have used same groups as previously.

CODE EXPLANATION	
g1:	Field equipment (forwarders, harvesters etc)
g2:	Solid fuel preparation (chippers, pelletizers etc)
g3:	Combustion (boilers, burners etc)
g4:	Chimneys, Filters etc
g5:	Steering, Control, Automatization
g6:	Drying, Condensing etc
g7:	Storage, Handling
g8:	Turbines, Generators etc
g9:	Chemical conversion (biodiesel, ethanol, biogas, etc)

Company	Country	Website	Code	Comment
A.B.S Silo-und Förderanlagen GmbH	Germany	www.abs-silos.de	g7	Solutions for storage, conveying, dosing and discharging bulk goods for agriculture, wood pellet storage, and other industrial applications.
Aalborg Energie Teknik A/S	Denmark	www.aet-biomass.com	g3	Develops, designs, engineers, builds and provides servicing of biomass-fired boilers, CHP and power plants 25-170 MWth.
AB Alstor	Sweden	www.alstor.se	g1	Manufactures off-road machines with articulated steering, full mechanical drive on all eight wheels and full bogie boxes.
Advanced Cyclone Systems, S.A.	Portugal	www.acsystems.pt	g4	Develops efficient cyclone systems worldwide for particle emission control in biomass boilers, heaters and dryers. Products include patented Hurricane and ReCyclone Systems.
AFM-Forest Ltd	Finland	www.afm-forest.fi	g1	Manufactures high-quality single-grip harvester, processor and combi heads for demanding forest operations.
Againity	Sweden	www.againity.com	g9	Manufactures and delivers complete solutions for biodiesel production with a capacity of 2 000 to 340 000 litres per day.
Agico Group(Anyang General International Co. Ltd)	China	www.agico.com.cn	g2	Manufactures and exports complete plants and equipment related to biomass, including small pellet mills, wood pellet mills, briquette presses, and pellet stoves.
Agrar Plus Beteiligungs-GmbH	Austria	www.agrarplus.at	g3, g9	Provides energy contracting, biomass district heating systems, cogeneration, and biogas.
AgriPower	USA	www.agripower.com	g3	Manufactures transportable medium-sized biomass burning systems for electricity production.
Agro Forst & Energietechnik GmbH	Austria	www.agro-ft.at	g3	Manufactures equipment for energy production from renewable resources like bark, sawdust, wood shavings, wood chips, scrap wood, recycled wood and straw.
Aimo Kortteen Konepaja Oy (Murska)	Finland	www.murskabiopacker.fi	g2, g7	Manufactures modular pellet production plants for sawmills, furniture factories or cattle feed production.
Airex Energy	Canada	www.airex-energy.com	g3,g6,g9	Develops solutions for thermal biomass and wood processing; offers energy recovery solutions.
Akhurst Machinery Ltd	Canada	www.akhurst.com	g1	Produces equipment for grinding and shredding, material drying. Pellet equipment and briquetting presses.
Alcon A/S	Denmark	www.alcon.nu	g3, g4	Provides biomass heating equipment up to 750 kW in many models.
Allan Bruks AB	Sweden	www.allanbruks.se	g1, g2	Develops and manufactures mobile chippers, harvesters and cranes for the forest industry.
Alstom Power Group	France	www.alstom.com	g3, g5	Provides equipment and services for power generation and rail transport. Turnkey projects; power, CHP and heat plants, and flue gas cleaning.
Amandus Kahl GmbH & Co.KG	Germany	www.amandus-kahl-group.de	g2	Complete wood pelleting plants from small to highest capacities with flat die pellet mills
Anderson Group Inc	Canada	www.grpanderson.com	g1	Designs and builds innovative, high quality agricultural and forestry equipment that ensures high yield and facilitates one-person operation.
Andritz Energy & Enviroment GmbH	Austria	www.andritz.com	g3	International provider of systems for thermal power generation and environmental technologies.
Andritz Feed & Biofuel	Denmark	www.andritz.com	g2	Complete process systems for industrial biomass pelletising. Total process solutions from raw material (i.e. wood logs, chips, sawdust, straw, agricultural byproducts) intake to ready pellets including debarker, chipper, dryer, grinders and pellet mills.
Andritz MeWa GmbH	Germany	www.bio-qz.de	g2	Manufactures a range of size reduction equipment and recycling machinery for different types of materials. Single machine or integrated in complete plant solutions.
Ankur Scientific Energy Technologie	India	www.ankurscientific.com	g3	Manufactures biomass gasification systems; world wide activity.
Antti Teollisuus OY	Finland	www.antti-teollisuus.fi	g7	Silo and conveying system for bulk materials within bioenergy applications. Silos for sawdust, shavings, chips and pellets. Mechanical and pneumatic conveyors for sawdust, shavings, chips and pellets.
Anyang Gemco Energy Mashinery Co. Ltd	China	www.agitc.cn	g2, g3, g9	Provides several types of equipment for biomass energy preparation; complete plants for biodiesel as well as pellets, briquets or charcoal.
Ariterm Group	Finland	www.ariterm.fi	g3, g7	Provides central heating boilers and a variety of biomass burning devices, from 3 kW to 3 MW.
Arjes GmbH	Germany	www.arjes.de	g1	Offers solutions for wood processing equipment and recycling machines – shredders.
Arodo GmbH	Germany	www.arodo.de	g7	Designs and manufactures palletising systems and sack filling systems.
Asket	Poland	www.asket.pl	g2	Technology for straw, reed canary grass processing: Tomasser shredding, Biomasser briquetting.
Astec Industries Co.	USA	www.astecinc.com	g2, g7	Designs, manufactures and markets a complete line of continuous and batch-process hot-mix asphalt facilities, and soil re-mediation equipment.
Axis Industries	Lithuania	www.axis.lt	g3,g9	Designs and produces equipment for biofuel boiler houses, water and heat metering devices, automatic substation modules. Performs implementation and modernisation of biofuel, gas and liquid fuel boiler plants.
Ayerbe Plantas Industriales de Secado	Spain	www.apisa.info	g6	Manufacture and installation of complete plants for agro-industrial drying.
B. Maier Zerkleinerungstechnik GmbH Dieffenbacher Group	Germany	www.maier-dieffenbacher.de	g2	Supplier of machines and complete solutions for the size reduction of wood and biomass: debarkers, drum chippers, crushers, knife ring flakers, hammer mills, prallfiners, conveyors, cleaning units, separating and fractioning systems.
Babcock & Wilcox Vølund A/S	Denmark	www.volund.dk	g3	Supplier of equipment and technologies designed to convert household waste and biofuels into thermal energy.
Balcke-Dürr GmbH	Germany	www.balcke-duerr.de	g4, g6	Power station components and services. Manufactures heat exchangers, air and flue gas systems, industrial filter systems.
Bandit Industries, Inc	USA	www.banditchippers.com	g1 g2	Manufactures Bandit chippers and Beast Recyclers for the transformation of biomass material into valuable feedstocks for fuel applications. Grind grasses, pallets, wood and more into any size product, even down to dust.
BDI - BioEnergy International AG	Austria	www.bdi-bioenergy.com	g9	Develops technologies for energy generation from by- and waste products. Provides customised turnkey biodiesel and biogas plants.
Beijing Aoke Ruifeng New Energy Co.,Ltd	China	www.bjakrf.com/en	g1,g2,g3	Designs and manufactures pellet and briquette equipment, biomass boilers, household stoves.
Beijing Panda Pellet Machinery Co., Ltd.	China	www.pelletwood.com.cn	g2	Specialised in designing, manufacturing, installing and commissioning complete pellet lines.
Bekon GmbH	Germany	www.bekon.eu	g6	Specialised in the construction of batch biogas plants.
Benefuel	USA	www.benefuel.net	g9	Biodiesel production and distribution company, with special dual metal catalyst transesterification process.
Berkes Hispana S.L.U	Spain	www.berkes.com.uy	g3	Efficient biomass combustion technologies.
Bertsch Energy GmbH & Co. KG	Austria	www.bertsch.at	g3	Develops, manufactures and supplies solid fuel boiler plants, combined-cycle/cogeneration HRSG, waste heat recovery boilers, process heat recovery systems and pressure equipment.

Urbas to supply Woodgas CHP to Japan

Austria-based steel construction and energy technology providers URBAS Maschinenfabrik Ges.m.b.H have revealed that it has received an order for a biomass gasification combined heat and power CHP plant from Genboku Group, a Japanese wood processing company.

The 560 kWth and 250 kWe capacity Woodgas CHP will be built at a Genboku facility in Tokushima prefecture in Japan and will use Japanese cedar woodchips as fuel.

Although the company has around 15 years of experience with wood-gasifiers, according to Peter Urbas, CEO of the family owned company, this represents “milestone in the internationalisation” of the company.

– We have Woodgas CHP plants located all around Europe and they accomplish high operating hours, said CEO Peter Urbas during the CEBE conference in Graz, Austria earlier this year.

According to Urbas, its Woodgas CHP plants have a variable electrical output, between 100 kW and 300 kW. Typical fuels are woodchips, bark and clean wood waste from industrial wood processing plants with between 10 and up to 18 percent moisture content (MC).

For the Genboku plant in Tokushima, comprehensive testing of Japanese cedar woodchips was carried out in Woodgas plant in Aus-



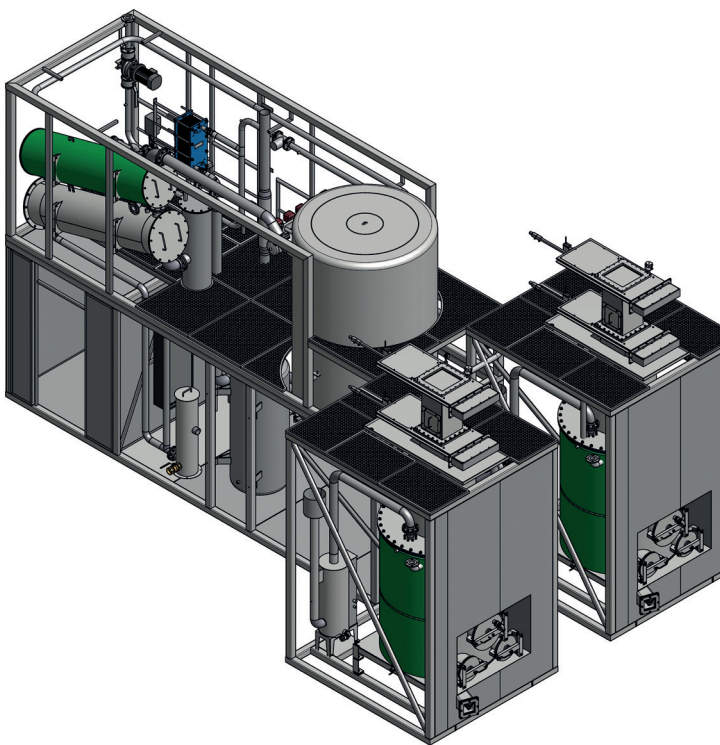
During the CEBE conference in Graz, Austria, Peter Urbas highlighted some of the more recent biomass plant reference projects for the company.

tria to prove the gas quality.

The plant will be built and tested by URBAS in Austria during May before being disassembled and shipped to Tokushima, Japan. Installation in Japan is estimated to begin in September with the goal that the startup will be already in November 2017.

– The customer visited our factory a lot of times before ordering and made sure this technology will fit into his expectations. After almost two years of working closely with the customer, to get the approval for this plant, we got the order for this international project, said Thomas Polainer, Technical Sales Manager at URBAS.

Text & photo: Alan Sherrard
BI92/5693/AS



Valmet to supply multifuel boiler with flue gas cleaning system to Kushiro Thermal Power Plant in Japan

Valmet has announced that it will, via its Japanese partner JFE Engineering (JFEE) supply a multifuel power boiler and a flue gas cleaning system to Kushiro Thermal Power Plant Inc., located in the city of Kushiro, Hokkaido, Japan.

Valmet's multifuel boiler and flue gas cleaning system delivery will be part of the 112 MWe power plant delivered by JFEE. Installation works will start in 2018. Commissioning and start-up are scheduled for the second half of 2019. Although the value of the order has not been disclosed, Valmet indicates that the value of this kind of a delivery is usually around EUR 50 million.

– Japan is investing in renewing its power production assets. The market is very good for the fluidized bed technology as there is an increasing focus



Biomass stockpiles at a Japanese power plant with palm kernel shells (PKS) in the foreground. Imports of PKS has almost doubled year-on-year to just over 539 000 tonnes in the 2015-2016 fiscal year.

on bioenergy and need for fuel flexibility, said Jouni Koskinen, Senior Sales Manager, Energy Sales, AP Japan, Valmet in a statement.

Valmet's delivery includes a CYMIC circulating fluidized bed (CFB) boiler for co-firing coal and biomass, consisting of wood pellets, crushed palm kernel shells (PKS) or their mixture. The thermal capacity of the boiler will be 265 MWth and the electricity production capacity of the whole power plant will be 112 MWe. Efficient emission control will be ensured by NOx-reduction system and bag house filter.

Partnership with JFE Engineering

The boiler delivery will be done by Valmet in cooperation with its local Japanese partner JFE Engineering (JFEE), a wholly owned subsidiary of JFE Holdings and is a continuation of Valmet's and JFEE's cooperation. The cooperation combines Valmet's technology solutions with JFEE's strong market presence in Japan and capability to supply power plants on an engineering, procurement and construction (EPC) basis. Kushiro Thermal Power Plant Inc., is owned/financed by a consortium consisting of Kushiro Coal Mine, F-Power, IDI Infrastructures and Taiheiyō Kohatsu Inc.

– JFEE's strong local presence and experience as an industrial boiler supplier and EPC contractor for power plants combined with Valmet's cutting-edge technologies were key to winning this delivery contract in Japan, said Keiichi Nagaya, Head of Sales and Marketing, JFE Engineering.

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Company	Country	Website	Code	Comment
Binder Energietechnik GmbH	Austria	www.binder-gmbh.at	g3	Manufacturers biomass boilers up to 20 MW (boilers for non-standard fuels, warm, hotwater and steam boilers, hot-air (drying) systems, thermal oil systems and CHP-systems for commercial, industrial, and communal applications).
BioDiesel Technologies GmbH	Austria	www.biodieseltechnologies.net	g9	Development, manufacturing and sales of equipment for the production of biodiesel (methyl ester).
Bioenergy LLC	Russia	www.bioenergy-spb.narod.ru	g9	Manufactures charcoal kilns and systems in different sizes, from 200 to 2000 tonnes per annum, stationary as well as mobile.
Bioenergy Machinery Sdn Bhd.	Malaysia	www.greenbioenergy.net	g2,g3	Manufacturer for wood pellet equipment in Malaysia. Provide machinery, training & marketing to local customers.
Biomass Heating Solutions Ltd bhsI	Ireland	www.bhsI.com	g3, g7	Offers a heating service guaranteed to work with poultry manure as a fuel as well as a patented Toploader, a material handling system for storing and moving large volumes of biomass and waste fuel products to the boiler.
Biotec Sistemi S.r.l	Italy	www.biotecsistemi.it	g9	Equipment for anaerobic digestion. Supplies turnkey plants, e.g. for the treatment of Municipal Solid Waste (MSW), Source Separated Organic Waste (SSOW), and more.
Biotech Energietechnik GmbH	Austria	www.biotech-heating.com	g3, g7	Provider of biomass technology with a wide range of products: pellet boilers from 2 to 99 kW, wood chip boilers from 25 to 200 kW.
Bliss Industries LLC	USA	www.bliss-industries.com	g2	Manufactures a complete line of hammermills (5-600 hp), counter flow coolers (1-100 TPH), pellet mills (80-500 hp) and crumblers for residential and commercial pellet production.
BM Silo Aps	Danmark	www.bmsilo.com	g7	Offers silos and transport equipment for dry material storage and transport.
BMH Wood Technology	Finland	www.bmh.fi	g2, g7	Turnkey supplies of bulk materials handling systems for energy generation, solid waste treatment and recycling as well as pulp and paper industries.
Bono Energia	Italy	www.bono.it	g3	Producer of industrial steam boilers, thermal fluid heaters, hot oil boilers, water treatment systems, environmental systems and biomass boilers.
Bracke Forest AB	Sweden	www.brackeforest.com	g1	Experts in forest regeneration. Machines can be divided into scarifiers, planting equipment, felling heads and seeding equipment.
Briklis Spol. s r.o.	Czech Republic	www.briklis.cz	g2	Producer of briquetting presses for wood waste and complete drying lines.
Bruks Holding AB	Sweden	www.bruks.com	g2, g1	Develops, manufactures and markets complete fuel handling systems for the wood-processing industry around the world.
Brunette Machinery Co.	Canada	www.brunettemc.com	g2,g7	Manufactures machinery/material handling systems for the biomass industry: grinders, conveyors, vibratory equipment, whole log chippers, microchippers, log decks, rotary debarkers; custom engineered solutions.
Bruzaholms Bruk	Sweden	www.bruzabruk.se	g3	Manufacturers of wear parts for asphalt and concrete mixers. The hardness of the wear parts is in excess of 650 HB.
BS Bollareto Implants	Italy	www.bsbollaretoimpianti.it	g2	Manufactures machinery for biomass recovery. Assists companies that want to reprocess their products into powder, fibers and flocs.
BS&B Safety Systems (UK) Ltd	UK	www.bsbipld.com	g5	Supplier of fire and dust explosion protection systems for the process industries.
BTG Bioliquids BV	Netherlands	www.btg-btl.com	g9	Provides pyrolysis technology and pyrolysis plants.
BTS Biogas Srl GmbH	Italy	www.ts-energygroup.com	g9	Provider of turnkey biogas power plants.
Buderus	Germany	www.ag.buderus.de	g3	Producer of commercial and domestic boilers for different fuels.
Burkhardt GmbH	Germany	www.burkhardt-gmbh.de	g3	Offers wood pellet-operated combined heat and power plants and wood gasifiers.
Burmeister & Wain Scandinavian Contractor A/S (BWSC)	Denmark	www.bwsc.dk	g3	Provider and operator of turnkey power plants, based on a variety of technologies using traditional or dry/wet biomass fuels.
Butamx TM Advanced Biofuels LLC	USA	www.butamax.com	g9	Provides technology to cost-effective production of biobutanol.
Bühler AG	Switzerland	www.buhlergroup.com	g2, g7	Offers technology for wood pellet projects (equipment for drying, grinding, pelletising, cooling, bagging, loading, automation) and for biomass cofiring projects (vertical and horizontal hammermills).
Büttner Energie- und Trocknungstechnik	Germany	www.buettner-dryer.com	g2,g3,g6	Manufacturer of industrial drying systems, energy plants and pellet plants.
C.F. Nielsen A/S	Denmark	www.cfnielsen.com	g2, g7	Manufacturer of mechanical briquetting presses with capacities from 200 to 3 500 kg/hour. Total process solutions from raw materials like wood, agricultural byproducts and others.
Cambi AS	Norway	www.cambi.no	g9	Provides advanced waste and sludge biogas systems, focused on maximising energy production and minimising final product mass.
Caravaggi S.r.l.	Italy	www.caravaggi.com	g1,g2	Manufactures bio-shredders, chippers and a full range of machines for special applications.
Carmanah Design & Manufacturing Inc.	Canada	www.carmanahdesign.com	g2	Provides technology and equipment to optimise fibre utilisation.
Carsan Biocombustibles S.L.	Spain	www.carsanbio.com	g3	Distributors of industrial and domestic scale biomass boilers, space heaters, and pellet stoves. Also distributes pellets made from sawdust, olive stones and peach stones.
Caterpillar	Switzerland	www.cat.com	g1,g2, g5,g8	Product and work tool for different industries, e.g. forestry (harvesters, wood extraction machines, processing, loading and reforestation), mining and construction.
Caterpillar Energy Solutions GmbH	Germany	www.mwm.net	g3	Suppliers of efficient and environmentally friendly complete systems for decentralised energy supply with gas and diesel engines.
Cellwood Machinery AB	Sweden	www.cellwood.se	g2	Pretreatment of household waste, manure, silage and slaughter waste.Reject separation of substrate such as plastic, glass, steel, sand and stones.
Central Boiler	USA	www.centralboiler.com	g3	Distributes outdoor wood boilers in the US. The boilers can heat multiple buildings, hot tubs, pools, greenhouses, domestic water and more, between 50-300 kW.
Changzhou Honghuan Machinery And Engineering Co.,Ltd	China	en.feedmachinery.com.cn	g1,g5	Specialises in feed machinery, including machinery, engineering, spare parts, electric control systems, steel structures and other auxiliary machinery.
CherkassyElevatorMash BRONTO	Ukraine	www.bronto.ua	g2	Manufacturer of extruders, briquettes and pellets machines, extrusion line, oil presses, conveyers, and handling systems.
Chinese Academy of Agricultural Mechanization Sciences	China	www.caams.org.cn	g1,g2,g9	Provides straw balers, cotton stalk harvesters, straw cutting-rubbing equipment, biomass gasification technology and equipment, and resource utilisation technology for farm and livestock wastes.
Cichewicz Kotly Sp. z o.o.	Poland	www.cichewicz.pl	g3	Export-oriented manufacturer of wood and pellet boilers for water and air systems, sizes from 20-500 kW. Provides also pellet burners and electronics.
CN Maskinfabrik A/S	Denmark	www.cn-maskinfabrik.dk	g3, g7	Manufactures boilers between 29-139 kW and also handling systems.
CNIM	France	www.cnim.com	g3, g4, g5	Provides turnkey industrial solutions in three major groups of products and services: environment, mechanical engineering and energy (e.g. household waste and biomass).
Cogent Industrial Technologies Ltd.	Canada	www.cogentind.com	g5	Defines, designs and integrates plant-wide electrical, automation and IT systems.
Compte-R	France	www.compte-r.com	g3	Designs, manufactures and installs wood and biomass furnaces (250 kW to 8 MW) and peripheral equipment for a wide range of industrial and municipal applications.
Continental Biomass Industries, Inc. CBI	USA	www.cbi-inc.com	g1, g2	Manufactures a complete line of grinders, shredders, chippers, flail debarkers and attachments that produce pulp chips, fuel chips and ground wood fuel from trees, forestry debris, demolition debris and industrial waste.
Cormall A/S	Denmark	www.cormall.dk	g2, g7	Provider of straw technology solutions and automatic feeding systems.
Costruzioni Nazzareno	Italy	www.nazzareno.it	g2	Specialises in the construction of complete turnkey wood pellets plants.
CPM Europe B.V.	Netherlands	www.cpmeurope.nl	g2, g5	Pelletising technology supplier, providing machinery for crushing, grinding, densifying, cooling, drying, sifting, computerised process controls, ingredient scaling systems and extrusion equipment.

Crowley Engineering	Ireland	www.crowley.ie	g2, g7	Delivers turnkey projects for grain handling, feed milling, wood pelletising, bioenergy plants, drying plants. Supplies preowned equipment and service.
CSB bvba	Belgium	www.csb-wastesolutions.be	g1, g2, g3, g7	Manufacturers and turnkey service of grinders, shredders, industrial granulators, wood boilers, conveyor belts, deferrisation systems, special machines and mobile shredders.
CSTfire	Czech Republic	www.cstfire.com	g3	Manufactures and services fully automatic boilers for biomass burning – pellets, woodchip and other wood residues - from 40 kW to 500 kW
Dall Energy Aps	Denmark	www.dallenergy.com	g3	Wood-fired heat only and CHP plants in the range of 2-10 MW thermal.
Danstoker A/S	Denmark	www.danstoker.dk	g3	Manufactures furnace and fire-tube oil and gas boilers, boilers for biomass, and waste heat recovery boilers for biomass applications.
Del-Tech Manufacturing Inc	Canada	www.deltech.ca	g3, g7	Provides bioenergy thermal fluid solutions, district heating, solid wood drying and control systems, and pellet plant design and installation.
Detroit Stoker Company	USA	www.detroitstoker.com	g3	Manufactures solid fuel burning stokers. Offers design, manufacturing, installation and operation service that provides optimal performance for all individual customers
Di Piu s.r.l	Italy	www.di-piu.com	g2	Manufacturer of mechanical briquetting presses. High quality makes the machines durable and problem-free while ensuring high performance and efficient processing.
Diamond Z	USA	www.diamondz.com	g1	Manufacturer of industrial grinders, offers a broad range of tub, horizontal and solid waste grinder models designed to suit any application.
Dieffenbacher GmbH Maschinen- und Anlagenbau	Germany	www.dieffenbacher.com	g2 g6	Manufacturing of complete production lines for wood-based panels such as particleboard, MDF, THDF, OSB, OSL & LVL. Individual supply of Maier chipping lines, Maier flaking and milling equipment, energy generation and dryers.
Dinnissen Process Technology	Netherlands	www.dinnissen.nl	g7	Producer of powders, particles, granules. Involved with feeding and discharging technologies, developing specialised machines, processing, control, automation and engineering.
Dome Technology	USA	www.dometech.com	g7	Provides dome storage solutions. Offers trunked projects at mines, ports, and plants around the world.
Donati s.r.l.	Italy	www.donatitrading.com	g7	Designs and builds handling equipment for wood waste, pellets, sawdust and wood chips.
Doppstadt Calbe GmbH	Germany	www.doppstadt.com	g1, g2	Provides stationary and mobile machine lines used for recycling of different materials e.g. biowaste, C&D, waste wood and trunks.
Dorssers Inc	Canada	www.dorssers.com	g2	Manufacturers of pellet mill dies, roller shells and roll replacement parts for all makes and models of pellet mills.
Double Crane Machinery Manufacture	China	www.sdshuanghe.com	g2	Specialised in feed machinery, grass machinery, chemical equipment and organic fertiliser production equipment.
Doza-Gran Ltd	Russia	www.dozagran.com	g2	Manufactures equipment for pellet as well as animal feeding production: ring-die pellet mills, wood chippers, rotary dryers, silos etc.
DP CleanTech	China	www.dpcleantech.com	g3	Manufactures and delivers turnkey biomass power plants worldwide. Includes boilers and auxiliary equipment for biomass power plants and waste-to-energy plants.
Dragon Power Co., Ltd.	China	www.dragonpower.com	g3	Engineering and utility company, owner of Bioener, Danish boiler production company.
Dresser-Rand	Germany	www.dresser-rand.com	g8	Manufacturer of steam turbine generator sets, turbines for dryers, and industrial compressors.
Dryer One	Belgium	www.dryer-one.be	g6	Drying technology supplier.
Duratech Industries	USA	www.duratechindustries.net	g1	Manufactures industrial tub and horizontal grinders from 325-950 hp, powered by CAT diesel engines.
Dutch Milling Technology International	Netherlands	www.dmt-int.com	g2	Provides pelleting technology, supplies replacement pelleting parts for the animal feed milling industry and biomass industry.
Döscher & Döscher GmbH	Germany	www.doescher.com	g5	Specialises in inline moisture measurement based on 2-parameter microwave resonance technology, which can be applied to pellets production processes.
E.H.W. GmbH	Austria	www.ehw-holzwerke.at	g2	Designs , builds and installs industrial plants for the production of pellets.
Eggersmann Gruppe GmbH&Co.KG	Germany	www.f-e.de	g2, g6	Specialised in the field of mechanical-biological waste treatment. Labelled with the brands KOMPOFERM and BEKON, the plant constructor has developed and established numerous dry fermentation waste treatment sites.
Ekosystem AB	Sweden	www.ekosystem.se	g3	Eurofire pellet burners in the range 20-300 kW.
Ekoterm Proekt EAD	Bulgaria	www.greenecotherm.eu	g3	Manufacturer of a wide range of pellet burners, pellets and firewood boilers, pellet stoves, combined firewood and/or pellets boilers with a thermal capacity in the range 9-100 kW.
ElectraTherm Inc	USA	www.electratherm.com	g8 g9	Provides small-scale waste heat recovery systems.
Elocom S.L.	Spain	www.elocom.com	g7	Provides complete lines of bag filling, palletising and wrapping systems.
Enercont GmbH	Austria	www.enercont.at	g7	Provides method for the woodchip supply by combining delivery and storage. Offers drying containers where the storage system is compatible with all common heaters.
Enerstenos grupe Ltd	Lithuania	www.enerstena.eu	g3	Designer and manufacturer of technological equipment for biomass boiler plants with units up to 20 MW and flue gas condensers for boilers in the range up to 50 MW. Implementation and modernization of biomass, gas and liquid fuel boiler plants and cogeneration plants.
Enertech AB Osby Parca Division	Sweden	www.osbyparca.se	g3	Provides solid fuel boilers in the range 100 kW to 7 MW, which can handle moisture contents up to 50 percent.
Enviroburners Oy	Finland	www.enviroburners.fi	g3	Developing, designing, manufacturing and delivering industrial burners and burner systems.
EnviTec Biogas AG	Germany	www.envitec-biogas.de	g9	Provides systems for the production of biogas, including the planning and turnkey construction of biogas plants as well as their commissioning.
Envor Protech OY	Finland	www.envorprotech.fi	g9	Specialised in industrial scale anaerobic digestion processes
Epsilon Kran GmbH	Austria	www.palfingerepsilon.com	g1	Producer of cranes for timber, scrap and recycling applications.
Eratic SA / Innergy Heavy Industries	Spain	www.eratic.es	g3	Provides the design, engineering and manufacture of boilers, heaters, dryers and combustion systems.
Essegi 2 s.r.l	Italy	www.essegi.com	g7	Designs and manufactures packaging and industrial automation lines, in particular vertical packaging machines (VFFS), vertical and horizontal balers and mixing lines for soil.
ETA Heiztechnik GmbH	Austria	www.eta.co.at	g3	Produces a wide range of boilers including wood gasification boilers, wood chip boilers, pellet boilers, and auxiliary wood boilers.
Europe Recycling Equipment BV	Netherlands	www.europe-rec.com	g1	Manufactures machines for waste treatment and recycling that make possible to shred, chip, cut, screen, crush, wash and mix all kind of recyclable material.
EWK Umwelttechnik GmbH	Germany	www.ewk.de	g4, g6	Supplies all types of filter products and heat recovery systems internationally.
Exodraft A/S	Sweden	www.exodraft.se	g4	Produces complete chimney fans with automatic controls that guarantee optimum chimney draught.
Fabryka Kotłów Sefako S.A.	Poland	www.sefako.com.pl	g3	Manufacturers of power-generating boilers used in the power industry, heavy industry and food producing and processing plants.
Factory Sales and Engineering IncFSE Inc	USA	www.fseenergy.com	g3	Manufactures solid fuel boiler systems. Complete boiler design and manufacturing, construction, installation and erection for industrial-scale applications.
Farmatic Anlagenbau GmbH	Germany	www.farmatic.com	g9	Provides an alternative to conventional waste disposal for agricultural organisations, as well as industry and local authorities.
Faust A/S	Denmark	www.faust.dk	g3	Halmeldnings utrustning upptill 600 kW. Många olika modeller. Kan även specialbygga till högre effekt.
Fecon Inc	USA	www.fecon.com	g1	Offers a line of biomass harvesting equipment including the Bio-Harvester, RTC-22 and FCM-22 Chipper Module. Dedicated to collecting small diameter woody biomass to larger diameter materials.
Feldbinder Spezialfahrzeugwerke GmbH	Germany	www.feldbinder.de	g7	Provides trailers and containers for pellets transport.
Feniks Pro d.o.o	Slovenia	www.feniks-pro.com	g5	Consultancy, design, engineering and implementation of automation in buildings and industry.

Company	Country	Website	Code	Comment
Ferotec	France	www.ferotec.eu	g2	Manufacturers and suppliers of replacement pelletising parts for the animal feed milling and the wood pellet industries. Also manufactures all types of pellet dies
Fike Canada Inc	Canada	www.fike.com	g5	Provides rupture disc technologies, explosion protection, fire alarm systems and fire suppression solutions.
Filcon A/S	Sweden	www.filcon.dk	g4	Supplies turnkey flue gas cleaning systems as well as ad- and absorption plants.
Filtertechnik	UK	www.filtertechnik.co.uk	g9	Provides filtration and purification solutions for biodiesel processing.
Fincantieri S.p.A	Italy	www.fincantieri.com	g3,g5,g8	Naval engineering groups. Provides power-generating components, turbines and related parts for different industries.
Firefly AB	Sweden	www.firefly.se	g5	Supplier of fire and dust explosion protection systems for the process industries.
Fisker A/S	Denmark	www.fisker.as	g7	Supplier of bag machines, carton and corrugated cardboard systems for retail and transport packaging, palletising and weighing systems, stretch film coilers and hydraulic presses.
Five Continents Machinery Co. Ltd.	China	www.fcm-cn.com	g2,g7	Manufacturer and supplier of biomass pellet machines.
Fliegl Iberica	Spain	www.fliegl.com	g7	Provides trailers for pellet and other biomass transport.
Flitech S.R.L.	Italy	www.flitech.it	g7	Specialises in manufacturing of carbon and stainless steel flights and screw conveyors, available in a large range of sizes and finishes.
Foster Wheeler Service Oy	Finland	www.fwc.com	g3	Global engineering and construction contractor and power equipment supplier. CHP larger than 20 MWt, boiler service.
Franssons Recycling Machines	Sweden	www.franssons.se	g2	Manufactures fast-running shredders and slow-running mills for recycling, fuel preparation and waste management.
Friedli AG Engineering und Anlagenbau	Switzerland	www.friedliag.ch	g2	Develops and improves the facilities in the area of grinding, forming and finishing. Provides individual components and produces complete systems.
Fröling GmbH	Austria	www.froeling.com	g3	Manufactures boilers for firewood, wood chip and pellets up to 1 MW as well as fuel feed systems and storage tanks.
Fulghum Industries Inc	USA	www.fulghum.com	g1	Manufactures equipment for the forest products industry. Equipment includes log cranes, debarkers, chippers, screens, conveying systems, and hogs.
Fumis by ATech ElectronicATech elektro-nika d.o.o. s	Slovenia	www.fumis.si	g3, g5	Provides biomass combustion control technology for stoves, burners and boilers.
Fumo Aps	Denmark	www.fumo.dk	g3	Develops, manufactures and designs biomass boilers and fuel feed equipment for a broad range of hot water heating and energy needs. Fully automatic boilers for biomass burning (pellets, wood chip and grains) in the range 12-500 kW.
Garioni Naval SpA	Italy	www.garioninaval.com	g3, g8	Offers boilers, steam generators and heating systems and installations which are innovative and are based on an awareness of consumption, energy saving and the environment.
GE Energy Jenbacher gas engines	Austria	www.gejenbacher.com	g3, g8	Manufactures gas-fueled reciprocating engines, packaged generator sets and cogeneration units for power generation.
Geelen Counterflow	Netherlands	www.geelencounterflow.com	g6	Developers, manufacturers and global suppliers of counterflow dryers and coolers for the food, animal feed, oilseed, biofuel, and recycling industries.
General Dies s.r.l.	Italy	www.generaldies.com	g2	Produces pellet mills and other machines for pellet production such as coolers, crumblers, sieves and spare parts.
Geoplast Kunststofftechnik GesmbH	Austria	www.geoplast.com	g7	Offers plastic container construction and pellet storage systems.
Gizex Sp.zo.o	Poland	www.gizex.com.pl	g3	Manufactures biomass heating equipment. Specializes in the manufacturing of hot air generators designed for dryers.
Global Times Bioenergy Co.Ltd	China	www.cntrades.com	g2	Provides pelletising technology designed for small and big pellet manufacturers.
GLS Tanks International GmbH	Austria	www.glstanks.com	g7	Designs, manufactures and assembles glass-lined steel tanks, silos and related accessories.
Gongyi Xiaoyi Mingyang Machinery Plant	China	http://hnmingyang.en.alibaba.com	g2	Manufactures charcoal making machines, sawdust carbonising machines, charcoal powder forming machines and cold rolled rib-bed equipment.
Graf-Equipment GmbH	Germany	www.graf-equipment.com	g2	Offers complete turnkey pellet plants. Manufactures spare and wear parts related to pelletising. Dies, rolls, beaters and sieves, die and roll revision.
Grandeg Wood Pellet Boilers	Latvia	www.grandeg.com	g3	Designs and manufactures modern automated wood pellet boilers.
GreCon Greten GmbH & Co. KG	Germany	www.grecon.com	g5	Supplier of fire and dust explosion systems for the process industry.
GreenMech Ltd	UK	www.greenmech.co.uk	g1, g2	Manufacturer of wood chippers, green waste shredders and stump grinders.
Gremo AB	Sweden	www.gremo.com	g1	Develops, manufactures and sells forest machines.
GTS Syngas GmbH	Italy	www.gts-syngas.com	g9	Intelligent gasification CHP plants
Guntamatic Heiztechnik GmbH	Austria	www.guntamatic.com	g3	Manufacture of boilers and heating systems for biomass (pellets, firewood, wood chips).
Götaverken Miljö AB	Sweden	www.gmab.se	g4	Provides flue gas cleaning and flue gas condensation solutions for the energy from waste sector and the process industry.
Haarslev Industries A/S	Denmark	www.haarslev.dk	g7	Equipment and systems for handling of byproducts from waste water treatment plants and from production of biofuel. Includes driers for various types of biomass, for further processing into pellets or briquettes.
Hamer LLC	USA	www.hamerinc.com	g7	Manufacturer of automated packaging systems, including conveying and handling.
Hammel Recyclingtechnik GmbH	Germany	www.hammel.de	g1	Offers a diverse range of shredding technology, from primary and secondary shredders to screening technology and complete processing plants.
Hamont Trading GmbH	Austria	www.hamont.com	g3	Provides boilers for biomass burning (pellets, wood chip and other wood residue), fully automatic in the range 15-500 kW.
HDG Bavaria GmbH	Germany	www.hdg-bavaria.de	g3	Manufactures boilers and heating systems for biomass (pellets, firewood and woodchips).
Heitling Anlagenbau GmbH & Co KG	Germany	www.heitling.de	g7	Manufactures trucks for wood pellet transport.
Hekotek AS	Estonia	www.hekotek.com	g3, g7 g2	Offers turnkey pellet factories, debarking and chipping lines for low quality logs.
Henan Kingman M&E Complete Plant	China	www.woodpelletline.com	g2, g3	Manufactures and designs wood pellet equipment and pellet mills.
Henan Strongwin Machinery Equipment-fCo., Ltd	China	www.strongwin.cn	g2	Manufactures pellet machines, edible oil production lines, brick machines, biomass energy machines, environment protection equipment, farm machines, food machines and other mechanical equipment.
Herz Energietechnik GmbH	Austria	www.herz-energie.at	g3	Manufactures environmentally friendly heating systems; wood gasification boilers, wood pellet boilers, wood chip boilers, heat pumps, buffer and hot water tanks and valves.
Hi-Tech Agro Projects Pvt. Ltd.	India	www.hitechagro.org	g2, g6, g7	Developer, manufacturer and worldwide supplier of biomass briquetting/pelletising machinery including preprocessing equipment (dryers, hammer mills, separators, conveying and conditioning systems) and MSW to RDF plants and machinery from 100 to 5 000 kg/hr capacity.
Hollensen Energy A/S / Industrivarmer	Denmark	www.hollensen.dk	g3	Provides turnkey biomass-fired boiler plants that operate with woodchip, straw, waste wood or wood pellets from 400 kW to 15 MW per unit.
Holzmatic engineering GMBH	Italy	www.holzmatic.com	g1,g2	Offers construction of woodworking plants and machinery such as stationary and mobile chippers, sawmill technology, etc.
Host Bio-Energy Installations	Netherlands	www.host.nl	g3, g9	EPC supplier of (waste) digesters, waste pre-treatment (thermal hydrolysis), biogas upgrading systems, digestate treatment, biomass fired boilers and biomass CHP's.

HRV Equipamentos de Processo SA	Portugal	www.hrv.pt	g2	Complete process systems for industrial biomass pelletising. Total process solutions from raw material intake to ready pellets including debarkers, chippers, dryers, grinders and pellet mills.
HTI , Heat Transfer International	USA	www.heatxfer.com	g3	Specialises in biomass gasification / electric power generation systems that convert solid and semi-solid biomass into combustible syngas that can be used to power generators, dryers, heaters and cooling equipment.
Hubei Cubic-Ruiyi Instrument Co,Ltd	China	www.gasanalyzer.com.cn	g5	Specialises in designing, developing and producing gas analyzers,systems, ultrasonic gas flowmeters, monitoring solutions of net-working industry.
Hugo Tillquist AB / Wesmar	Sweden	www.wesmar.se	g5	Supplier of gauges, especially sensors and system solutions for the process and manufacturing industries. Produces equipment for measuring level, flow, pressure, weight and position.
Hugo Vogelsang Maschinenbau GmbH	Germany	www.vogelsang-gmbh.com	g2	Manufactures pumping, grinding and spreading technology for the municipal, industrial and agricultural markets around the world.
Hurst Boiler & Welding Co., Inc.	USA	www.hurstboiler.com	g3	Designs, fabricates and installs gasification, combustion and heat recovery thermal systems worldwide.
IEM Fördertechnik GmbH	Germany	www.iem-kastl.de	g7	Manufacturer of a wide range of conditioning and conveying technologies, both in the bulk and the solid goods sectors, serving a wide range of industries. From planning and design of systems to their manufacturing, assembly and start-up as well as single components, spares and wear parts.
IFP Ingenieurbüro für Pelletiertechnologie	Germany	www.pressformen.com	g2	Manufactures spare and wear parts related to pelletising. Dies, rolls, beaters and sieves, die and roll revision.
Inadco Moisture Measurement BV	Netherlands	www.inadco.nl	g5	Provides technology to measuring the bulk density, moisture, quantity and biomass energymeter
Industrial Dujua Maquinas e Equipamentos Ltda	Brazil	www.dujua.com.br	g7	Specialised in receiving, handling and storage systems and transferring solid fuels and biomass to industrial processes as well as complete systems for boiler feeds.
Industriebedarf Castan GmbH	Germany	www.ca-pellets.de	g7	Produces hoses and tubes to transport pellets from container to burner, and special rubber sheeting for pellets containers.
Instalmec s.r.l.	Italy	www.instalmec.it	g6	Manufacturer of complete pellet production lines and plants for the production of PB, MDF, OSB panels. Provides dryers for wood particles and wood fibre and recycling/waste wood treatment technology.
IQR Systems AB	Sweden	www.iqr.se	g2	Works with systems and solutions for energy recovery from waste materials.
IS Save Energy AG	Switzerland	www.saveenergy.ch	g4, g6	Provides flue gas cleaning of particles and aerosols from biomass-fired combustion plants. Products include: flue gas condensation, dry electrostatic precipitator, wet electrostatic precipitator, bag filter.
J.P Carlton Company	USA	www.stumpcutters.com	g2	Provides stump cutters and chippers internationally.
Jacobs Corporation	USA	www.jacobsCorp.com	g2	Offers replacement parts for hammermills and pellet mills.
Javo International BV	Netherlands	www.javointernational.com	g7	Offers solution for storage and distribution of wood chips, substrate and other (waste) bulk material. Self-emptying on demand.
JCB	UK	www.jcb.com	g1,g2,g5,g8	Manufacturer of work tools for different industries, e.g. forestry (harvesters, wood extraction machines, processing, loading and reforestation), mining and construction.
Jeffrey Rader AB	Sweden	www.jeffreyrader.com	g7	Part of K-Tron International with screening and processing of wood based materials, pneumatic transport, storage and reclaim of wood based materials, material handling of bulk materials.
Jenz GmbH	Germany	www.jenz.de	g1, g2	Manufacture of mobile and stationary grinders, drum screens, touring and mixing machines, mobile chippers and regrinders.
Jernforsen Bioenergy Solutions AB	Sweden	www.jernforsen.com	g3	Manufactures and services combustion plants for district heating, sawmills and processing industries, CHP, drying plants and flue gas cleaning. Dry and wet fuel, industrial and public customers. More than 500 bioplants delivered all over Europe.
Jiangsu Yongli Machinery Co,Ltd	China	www.yongli-machine.com	g2	Producers of equipment for complete pellet systems including hammermills, chippers, dryers, presses and conveyors.
Jiangsu Zhengchang	China	www.zhengchang.com	g2	Manufactures pellet mills, conveyers, extruders, hammer and roller mills, cleaning equipment, screening and drying.
Jiaozuo Hengmu Husbandry Machinery	China	www.jzhmjx.company.weiku.com	g2	Produces feed machines and packing units, compound fertiliser processing machines and complete biomass energy machines.
Jinan Jihong Machinery Co., Ltd.	China	www.jihongjixie.com	g2	Manufactures tower cranes, construction elevators and large pellet mill machines.
JM Stofftechnik AB	Sweden	www.jmstofftechnik.com	g4	Produces flue gas cleaning equipment mainly for bioenergy fuel firing, such as multicyclones, bag filters, flue gas fans and rotary locks.
John Deere Forestry Oy	Finland	www.johndeere.com	g1	Develops markets and manufactures a full line of cut-to-length and full tree harvesting solutions: wheeled and tracked harvesters, forwarders, skidders, harvester heads, cranes and information systems.
Junkkari OY	Finland	www.junkkari.fi	g1	Agriculture and forestry machine provider. Designs, markets and manufactures agriculture and forestry machines for seeding, fodder production and plant protection.
Justsen Energiteknik A/S	Denmark	www.justsen.dk	g3	Manufacturer of hot water and steam boiler systems and combustion equipment for biofuel in the range 1-20 MW.
Kalvis UAB	Lithuania	www.kalvis.lt	g3	Provides boilers and stoves for biomass fuelled with wood and pellets up to 5 MW
Keith Manufacturing Co	USA	www.keithwalkingfloor.com	g7	Provides systems to be used in self-unloading trailers and in bulk handling systems as receiving and storage bins. Walking Floor Systems handle difficult bulk materials.
Kesla Oyj	Finland	www.kesla.com	g1	Specialises in the design, manufacture and marketing of forest technology, and the timber harvesting production line.
KMZ Industries	Ukraine	www.kmz.pl.ua	g7	Provider of turnkey solutions for the grain storage and handling industry.
Kohlbach Group	Austria	www.kohlbach.at	g3	Manufactures water, steam and thermal oil boilers and heating systems for biomass and more, e.g. residues from wood processing, in the range 400 kW to 18 MW.
Komatsu Forest AB	Sweden	www.komatsuforest.se	g1	Manufacturer of full line forestry machines. Supplier in the area of mechanized logging.
Komptech GmbH	Austria	www.komptech.com	g1, g2	International technology supplier of machinery and systems for the mechanical and mechanical-biological treatment of solid waste and for the treatment of biomass as a renewable energy source.
Konecranes AB	Sweden	www.konecranes.com	g2	Provides solutions as well as services for lifting equipment and machine tools of all makes. Serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals.
Konrad Forsttechnik	Austria	www.forsttechnik.at	g1	Manufactures forestry machines such as harvesters and cranes.
Korea District Heating Corp.	Korea	www.kdhc.co.kr	g3	Provides district heating systems to cities around the world.
KPA Unicon Ltd	Finland	www.kpaunicon.com	g3	Provides comprehensive boiler plant projects starting with the choice of fuel all the way up to the production of heat and steam.
Krann Engineering Limited	Canada	www.krann.ca	g3	Offers gasification systems fueled by waste wood, agro-waste, RDF for steam, hot water, dryers, and CHP in the range 1-22 MW.
KWB - Kraft und Wärme aus Biomasse	Austria	www.kwb.at	g3	Manufactures boilers and heating systems for biomass (pellets, wood chip and firewood).
Köb Holzfeuerungen GmbH/Viessmann	Austria	www.kob.cc	g3	Heating technology for firewood, shavings, pellets and wood chips in the range 35-1250 kW.
L. Solé S.A.	Spain	www.lsole.com	g3, g6	Provides turnkey biomass plants. Manufactures wood drying kilns and biomass boilers.
La Meccanica srl di Reffo	Italy	www.lameccanica.it	g2	Offers feeding plants, pelletising lines for wood pellets, mills, dehydration plants, sugar refineries, oil-mills, and organic and mineral-organic fertiliser processing plants.
Laatukattila Oy	Finland	www.laka.fi	g3	Manufactures boilers, district heating plants and waste burning equipment for burning wood, chips, sawdust, bark, pellets, sod peat, coal, oil, gas, and solid waste from 10 kW to 5 MW.
Lachenmeier Monsun A/S	Denmark	www.lachenmeier-monsun.com	g7	Provides complete industrial plants for grain drying and storage, inland and port terminals, oil and feed mills, premix factories, malting plants and plants for handling of biomass fuels. MONSUN™ bucket elevators, conveyors, storage , intake , truck loading and dust aspiration systems .

Company	Country	Website	Code	Comment
Laidig Systems Inc	Canada	www.laidig.com	g7	Provides biomass material handling, turnkey storage and reclaim systems.
Lambion Energy Solutions GmbH	Germany	www.lambion.de	g3, g8,	Provides biomass power plants in the capacity range 1 - 30 MWth for safe and reliable production of heat, steam and electricity.
Lambton Machinery (Zhengzhou) Ltd.	China	www.lambtonchina.en.china.cn	g2	Provides conveyors and pellets presses for the grain industry.
Landtechnik Urch GmbH/Mus Max GmbH	Austria	www.mus-max.at	g1	Provides forestry technology; mobile wood-chipping machines, silo feeding technology, farm technology and conveyor belt technology.
Lao Biomass Energy Technology Co., Ltd	China	www.laowan.com	g3	Produces coal stoves and boilers. Stoves specially designed for agricultural pellets.
Lasco Heuthechnik GmbH	Austria	www.lasco.at	g1,g2,g7	Offers technology for timber and hay handling including log-transport trailers (tumbrell), timber loading cranes, log grabbers and a patented log splitter.
Leroux & Lotz Technologies	France	www.lltcom.com	g3	Provides biomass boiler islands up to 100 MWt and industrial boilers for virgin and recycled wood, as well as municipal and industrial wastes. Supplies multifuel pellets burners for large power co-firing.
LHM Hakkuri Oy	Finland	www.lhmhakkuri.com	g1	Designs, manufactures and sells chippers.
Liaoning Modern Agricultural Machine Equipment Co., Ltd.	China	www.lnxdnj.cn	g1,g2,g6	Modern large-scale agricultural equipment base integrating learning, research and production of tillage land preparation machinery and seeder, harvester, and complete equipment of biomass straw particles.
Lin-Ka Energy A/S	Denmark	www.linka.dk	g3	Develops fully automatic firing systems for agriculture, industry and district heating plants. Systems are based on biofuel, primarily straw, wood chips and pellets, with capacities of 100 kW - 15 MW.
Linddane A/S	Denmark	www.tp.dk	g1, g2	Manufactures wood chippers for use in gardens, parks and forests.
Liyang Tongfu Feed Machinery Co., Ltd.	China	www.liyangtongfu.com	g1,g2	Produces biomass wood pellet machines, straw particle machines, feed machinery sets and accessories.
LJM Lind Jensens Maskinfabrik A/S	Danmark	www.ljm.dk	g9	Manufactures mixers/stirrers for biogas plants for handling slurry and fluids.
Log Max	Sweden	www.logmax.com	g1	Designs and manufactures machines for mechanised forestry operations.
Logman Oy	Finland	www.logman.fi	g1	Manufactures forwarders and harvesters for forestry markets.
Logstor A/S	Denmark	www.logstor.com	g4	Supplies complete pre-insulated pipe systems aimed at minimising energy loss during the transportation of gases and liquids to the district heating and cooling, oil and gas, and marine and industrial sectors.
Läckeby Water Group	Sweden	www.lackebywater.se	g9	Provides equipment for biogas production.
M-E-C Company	USA	www.m-e-c.com	g6 g7	Product lines include single pass, triple pass and flash tube dryers, fuel storage, material handling, fuel preparation, wet and dry fuel combustion systems, all offered as turnkey installations.
MAFA i Ängelholm AB	Sweden	www.mafa.se	g7	Complete plants for bulk material handling for industry, silos, mixers for dry material, transport conveyors, dosing equipment and weighing and control systems.
Magnabosco Boilers	Italy	www.magnabosco.com	g3, g9	Designs and manufactures pellet, wood, electric, biofuel steam boilers.
Malmberg Gruppen AB	Sweden	www.malmberg.se	g9	Environmental technology company in the field of biogas, geoenergy, water treatment and drilling.
Man Turbo AG	Germany	www.manturbo.com	g8	Turbomachinery product range includes steam turbines in the range 1.5-30 MWeI for biomass and waste applications.
Manirenta UAB	Lithuania	www.manirenta.lt	g1	Offers sale, rent and service of telescopic loaders and different wood processing machinery.
Martin Engineering Ltd	UK	www.martin-eng.com	g7	Manufactures bulk materials handling systems, dust collection and dust suppression systems.
Martin GmbH für Umwelt-und Energie-technik	Gemany	www.martingmbh.de	g3	Construction of waste-to-energy plants. Covers all relevant areas, from erection of plants to support, consulting and service, spare parts supply.
Maschinenbau Siegel	Austria	www.siegel-mb.at	g2	Producer of hydraulic briquette presses for dry wood shavings, chopped wood and grinding dust.
Mawera Holzfeuerungsanlagen	Austria	www.mawera.com	g3	Manufactures wood combustion systems; firebox boilers.
Maximatecc	Sweden	www.maximatecc.com	g5	Development of electronics and software, production and deliveries of system solutions and products for vehicle and machine control.
Mazzinilci SpA	Italy	www.mazzinilci.com	g4	Designs, manufactures and installs heavy-duty air filtering and dust exhausting systems; dust and fibre suction systems; fibre separating, compressing and recovery systems; waste pressing and baling systems.
McBurney	USA	www.mcburney.com	g3	Provider of biomass boiler systems.
Megatrex	Finland	www.megatrex.com	g2	
Metalúrgica Ros S.A.	Spain	www.rostubos.com	g7	Specialises in the manufacture of pipes and accessories made from polished galvanised sheet metal, stainless steel and other metals with both traditional and contemporary modular joint systems.
Meva Energy AB	Sweden	www.mevaenergy.com	g3	Provides technology to convert biofuel to energy and products to combine heat and power. Typical output between 1-10 MWe and 2-20 MWth.
Minimax Fire Solutions International GmbH	Germany	www.minimax.de	g5	Develops, fabricates, designs, supplies, installs and services approved and certified fire protection solutions for complete biomass or pellet plants including fire and dust explosion protection systems for the entire process technology, worldwide.
Mion&Mosole I.A.I. Spa	Italy	www.mionmosole.it	g2	Development of suction and purification plants for industries. Mainly serves the wood industry.
Mitchells	Luxembourg	www.mitchells-europe.eu	g7	Offers solids and bulk handling systems. Complete conveying solutions accros a range of industries.
Mondi Coatings GmbH	Austria	www.mondigroup.com	g7	Provides packaging and paper value chain – from managing forests and producing pulp, paper and compound plastics to developing industrial and consumer packaging solutions.
Monsal Limited	UK	www.monsal.com	g9	Provides advanced anaerobic digestion and integrated biogas to energy technologies.
Morbark, Inc.	USA	www.morbark.com	g1 g2	Builds equipment that creates opportunities in the forestry, recycling, sawmill, bioenergy, and tree care markets. Morbark equipment helps customers process organic materials into valuable products.
Morillon SAS	France	www.morillonsystems.com	g7	Provides unique solutions for handling of bulk products
Muyang Holdings Co., Ltd	China	www.muyang.com	g2	Provides research and development, project design, manufacturing, installation and services for process industries including biomass; engineering, pellet presses and lines, conveying equipment and automatic control systems.
Müller SA Chauffages Au Bois	Switzerland	www.muller-services.ch	g3	Wood furnaces for wet and dry fuel and special heating systems for pellets with low-particle concept, combustion optimisation and high efficiency control. Capacities in the range 100-3000 kW.
Münch-Edelstahl GmbH	Germany	www.muench-gmbh.net	g2	Manufacturers of complete pellet mill- and grinder-lines and spare parts for pellet mills.
Nakkilan Konepaja Oy	Finland	www.nakkilankonepaja.fi	g3	Biofuel boiler plants in sizes up to 10 MW.
Nawrocki Sp.z o.o.	Poland	www.granulatory.com	g2	Producer of universal pelletising units for milled biomass up to 5 tonnes per hour.



Neuero Industrietechnik für Förderanlagen	Germany	www.neuero.de	g7	Manufacturer of pneumatic and mechanical bulk materials handling.
Neumanßesser Group	Germany	www.neuman-esser.com	g9	Production of oil-free and emission-free reciprocating compressors and compressor units for biogas treatment and for feeding bio-methane into the gas network – including a life cycle service.
New Eco-tec Verfahrenstechnik	Germany	www.new-eco-tec.com	g6 g9	Offers technology for all dimensions of drying solutions.
O.M.A Impianti	Italy	www.oma-srl.com	g2	Manufactures pellet presses, briquette presses, dryers, complete plants for pellets production, storage silos, separator cyclones and mills and refiners for wood.
Obilni Technika, s.r.o.	Czech Republic	www.obiltech.cz	g2 g6	Supplier of technologies for drying, pelletising or briquetting lines inclusive of installation and service. Supplies also installation and servicing of technologies for post-harvest lines and cereal storage.
OKR Cleaning ApS	Denmark	www.okrcleaning.dk	g3, g4	Specialises in designing and manufacturing a soot blowing system. Focus on continuous removal of soot and deposits in boilers or heat exchangers.
Opcon Bioenergy AB	Sweden	www.opcon.se	g6	Develops, produces and markets systems and products for efficient use of energy. Focus on renewable systems. Opcon Powerbox produces electricity from steam.
Ortner GmbH	Austria	www.ortner-cc.at	g4	Produces fireproof products, being used in contemporary fireplace construction, for furnace fitters and their business partners.
Pal s.r.l.	Italy	www.imalpal.com	g2	Supplies complete plants, equipment and systems for the production of PB, MDF and OSB panels, insulation board, pallet blocks, pellets, products made from biomass and pressed wood products in general.
PanPac Engineering A/S	Denmark	www.panpac.dk	g7	A full-line supplier of turnkey products for bag-filling, palletising, shrinkwrap, big-bag and internal transport equipment.
Paradigma Energie und Umwelttechnik	Germany	www.paradigma.de	g3	Produce regenerative heating systems such as wood pellet boilers, gas condensing boilers and solar heating systems.
Passat Energi A/S	Denmark	www.passat.dk	g3	Manufactures biofuel plants, supplies boilers both to the consumer and smaller industry as well as district heating.
Pawert - SPM AG	Switzerland	www.pawert-spm.ch	g2	Delivers briquetting plants all over the world. Capacity range of 150-4600 kg/hour.
Peder Halvorsen Industrier AS	Norway	www.phi-as.no	g3	Movable heat and steam boilers for biomass and other fuels.
PELLASX Sp. z o.o. Sp. k.	Poland	www.pellax.eu	g3	Pellet burners range from 5 kW to 350 kW.
Pelleting Technology Nederland PTN	Netherlands	www.ptn.nl	g3	Designs and manufactures complete pelletising line for applications in the feed mill and recycling industry.
Pelltech Ltd	Estonia	www.pelltech.eu	g3, g7	Designs and produces pellet burners from 20 kW to 1 MW capacity, as well as high quality containers, pellet-delivery and fully automatic ash removal systems.
Peter Brotherhood Ltd/Dresser-Rand Ltd	United Kingdom	www.peterbrotherhood.co.uk	g8	Manufacturer and service provider of process and energy systems. Provides steam turbines, reciprocating gas compressors, packaged CHP systems, special purpose machinery and after-market services.
Peterson Pacific Corp.	USA	www.petersoncorp.com	g1 g2	Manufactures whole-tree pulpwood chippers and debarkers, horizontal grinders, blower trucks and trailers.
Petkus Technologie GmbH	Germany	www.petkus.de	g2	Supplies a range of seed and grain handling and processing technologies as well as feed plants.
Petrokraft AB	Sweden	www.petrokraft.com	g3, g4	Provides burners with fuel and air distribution systems, SNCR-systems for NO2 reduction, combustion grate systems incorporating furnace, and fuel and ash handling equipment.
Pezzolato Costruzioni Meccaniche S.p.A.	Italy	www.pezzolato.it	g1, g2	Manufactures machines for the preparation of firewood, refuse and recycling, and sawmill integrated systems.
Pinosa srl	Italy	www.pinosa.net	g1	Produces machinery for the production of firewood and other forestry sector applications.
PKT Technology	Italy	www.pkt.it	g7	Supplies bag machines, carton and corrugated cardboard systems for retail and transport packaging, palletising and weighing systems, stretch film coilers and hydraulic presses.
PlanET Biogastechnik GmbH	Germany	www.planet-biogas.com	g9	Offers core competence in the construction of biogas plants, control techniques, and the construction of solid supply insertions. International presence.
Poeth Solids Processing BV	Netherlands	www.poeth.nl	g7	Develops, produces, erects and commissions, sophisticated machinery and production lines for various processes in solids handling.
Polytechnik Luft-und FeuerF ungstechnik	Austria	www.polytechnik.com	g3	Supplies biomass fuel combustion plants with an approximate capacity range of 300 kW to 30 000 kW.
Ponsse Plc	Finland	www.ponsse.com	g1	Designs, markets, manufactures and services cut-to-length forest machines for both industrial and energy wood: harvesters, forwarders, harvester heads, and information systems.
Pratt & Whitney	USA	www.pw.utc.com	g8	Designs, manufactures and services aircraft engines, industrial gas turbines and space propulsion systems.
Precision Husky Corp.	USA	www.precisionhusky.com	g2, g7	Engineers and manufactures heavy equipment for the forest products/logging/recycling industries, including tub and horizontal grinders and whole tree chippers.
Process Barron	USA	www.processbarron.com	g7	Manufactures mechanical draft fans, material handling systems, dust collectors, and auxiliary products.
Prodesa Medioambiente S.L.	Spain	www.prodesa.net	g2, g6	Biomass solutions, EPC and turnkey wood pellets plants with or w/o cogeneration (ORC), biomass thermal dryers (low and high temperature)
Promill SAS	France	www.promill.fr	g2, g3, g6	Supplies drying, milling and pelleting technology. The core technologies are rotating drums, single/triple pass drum dryers, air heaters, crushers, pellet mills and hammer mills in industries like wood energy, sugar, alfalfa, feed, oil and starch.
Pellet Systems International	Canada	www.pelletsystems.com	g2	Provides complete turnkey pellet mill systems engineered for high production and low energy consumption.
Radscan Intervex AB	Sweden	www.radscan.se	g6	Flue gas condensation and comprehensive range of equipment and systems for the cleaning and energy recovery of gases and liquids.
Radviliskis Machine Factory, JSC	Lithuania	www.factory.lt	g2	Manufactures pellet mills, hammer mills, conveyors, coolers, shredders, bunkers, rollers. Supplies complete pellet plants for straw, wood, peat, sunflower husks, bran and other materials.
Rauakoda OÜ	Estonia	www.rauakoda.ee	g1	Manufacturer and supplier of metal structures, produces also shovels and attachments with a variety of applications for front-end loaders
Raumaster Oy	Finland	www.raumaster.fi	g7	Supplies material handling systems for pulp and paper and energy industries.
Rawlings Waste Wood Recovery Systems	USA	www.rawlingsmanufacturing.com	g1	Manufacturer of high inertia wood hog/waste wood grinder. Equipment to recycle wood waste, powerful wood grinding machinery, and powerful equipment to process biomass fuel and mineral waste.
Rayco Manufacturing Inc	USA	www.raycomfg.com	g1	Manufacturer of stump cutters, brush chippers, log spliers, horizontal grinders, land clearing equipment and cutting tools.
Recalor S.A	Spain	www.recalor.com	g6	Specialized in the engineering and construction of custom designed drum dryers for the wood panel and wood pellet industry
Reka A/S	Denmark	www.reka.com	g3	Manufactures boilers for burning straw and wood. Designs, markets, manufactures complete combustion plant/district heating plant.
Renewa Oy	Finland	www.renewa.fi	g3	Offers advanced combustion solutions for local energy production using biofuels in heat and power plants.
Renewables Plus Ltd.	Malaysia	www.renewablesplus.com	g3	Develops and implements renewable energy projects utilizing new generation of biomass gasification and thermal plasma gasification.
Revis Bioenergy GmbH	Germany	www.revis-bioenergy.de	g9	Delivers turnkey biogas plants. Offers crop operations, farm waste operations, planning consultants.
Riela Karl-Heinz Knoop e.K.	Germany	www.riela.de	g6, g7	Manufactures silos, dryers and handling equipment for agri industry including pellets.
Riley Power Inc(Babcock Power)	USA	www.babcockpower.com	g3	Develops ateam generating and fuel burning equipment for fossil, biomass, and waste fuel fired boilers. Provides rebuilds and replacement pressure parts, new steam generators, complete line of SCRs.
Rogbico AB	Sweden	www.rogbico.se	g1	Manufactures bundler for forest residues
Rosal S.A.	Spain	www.rosal-feedmills.com	g2	Designs, manufactures and starts up complete wood pelleting lines. Manufacturers of pellet mills, hammer mills, walking floors, belt conveyors, silos, bucket elevators and chain conveyors.

Company	Country	Website	Code	Comment
Rosenbauer International AG	Austria	www.rosenbauer.com	g5	Supplier of fire and dust explosion protection systems for the process industries.
Rotawave Ltd	UK	www.rotawave.com	g9,g2	Develops and supplies torrefaction plants based on microwave technology
Rotochopper, Inc	USA	www.rotochopper.com	g1,g2	Manufactures machines for forestry and recycling industry including grinders, chip processors and bagging solutions.
Rottne Industri AB	Sweden	www.rottn.com	g1	Manufacturer of modern logging machinery.
Rudnick & Enners GmbH	Germany	www.rudnick-enners.de	g2	Supplies feeding systems for biomass plants, turnkey pelletising plants, wood working machines, conveying systems
RUF GmbH & Co KG	Germany	www.briquetting.com	g2	Designs and manufactures a range of briquetting presses which can handle between 30 and 1,500 kg/h of waste material.
S-E-G Svenska AB	Sweden	www.s-e-g.se	g2,g7	Supplies industrial weighing, belt scales, feeders and solid mass flow meters.
Saalasti Oy	Finland	www.saalasti.fi	g2, g7	Manufacturer of innovative heavy machinery for the forest and bioenergy industries incl. special freight transportation solutions.
Sahut-Conreur	France	www.sahutconreur.com	g2	Design and construction of briquetting and compaction-granulation units.
Salsco inc	USA	www.salsco.com	g1, g2	Manufacturer of equipments like chippers, shaving mills, balers in sizes up to industrial scale, also equipment for agriculture, landscape care and municipality.
Salmatec	Germany	www.salmatec.com	g2	Manufactures, designs and delivers the complete wood pelleting equipment.
Sampo-Rosenlew Oy	Finland	www.sampo-rosenlew.fi	g1, g7	Manufacturer of forest and combine harvesters and industrial cleaners.
SBS Janfire AB	Sweden	www.janfire.com	g3	Provides complete heating solutions including pellets burners and boilers, pellets storage and combined units. Heating solutions for domestic market and up to 600 kW.
SCE Silo Construction and Engineering	Belgium	www.sce.be	g7	Produces and assembles entire turnkey silo buildings
Schaller GmbH	Austria	www.humimeter.com	g5	Manufacturer of moisture meters for the biomass industry. Product line includes both hand-held instruments, as well as online. Measuring systems for continuous determination of moisture content of biomass.
Scheuch GmbH	Austria	www.scheuch.com	g4, g5	Provides wide range of products for clean air and environmental technology.
Schmack Biogas AG (Viessmann Group)	Germany	www.schmack-biogas.com	g9	Plans and constructs biogas plants optimised for the fermentation of renewable materials.
Schmid AG, Energy Solutions	Switzerland	www.schmid-energy.ch	g3	Provides quality biomass energy. Specialized in wood firing systems for family houses to large scale systems up to 6MW capacity.
Seeger Engineering AG	Germany	www.seeger.ag	g2,g3,g4,g6,g7	Provides complete lifecycle power solutions. Energy recovery from biomass.
Segem Macbo	France	www.segem.com	g2	Designs and manufactures machines for the wood industry and the wood-energy
Sensortech Systems Europe	Netherlands	www.sensortechsystems.eu	g5	Provides moisture measurement and control systems
Shanghai Shende Machinery Co., Ltd	China	www.andritz.com	g2	Manufactures feed machinery and provides whole-plant turnkey project design and building for feed mills as well as the auxiliary equipment and spares.
Shanghai ZhengChang International Machinery & Engineering Co., LTD	China	www.zhengchang.com	g2	Manufacturer of pellet mills, conveyers, extruders, hammer and roller mills, cleaning equipment, screening and drying.
SHW Storage and Handling Solutions	Germany	www.shw-shs.de	g7	Provides storage and handling solutions for many industries
Siemens AB Power Generation	Sweden	www.powergeneration.siemens.com	g3, g5, g8	Provides power plants and power-generating components, wind turbines, turbines for use as mechanical drives and compressors for industry, instrumentation, control systems, fuel cell technology and extensive services.
Silobau Steinecke GmbH	Germany	www.allg-silotec.de	g7	Manufactures the equipment for the storage of bulk goods and flexible silos.
Silvatec Skovmaskiner A/S	Denmark	www.silvatec.com	g1	Specializes in the production, sale and service of harvesters and harvesting heads, self-propelled chippers and chart-mounted chippers.
Simatek A/S	Denmark	www.simatek.dk	g4	Supplier of pulse-jet fabric filters and filter systems for almost any requirement of industrial particle separation and dust collection.
Simon Storage Ltd	United Kingdom	www.simonstorage.com	g9	Provides storage, blending and distribution of green fuels including bio-ethanol, bio-diesel and vegetable oils used in power generation.
Siwertell AB	Sweden	www.siwertell.com	g7	Offers plant and terminal design, ship unloaders, ship loaders, road-mobile ship unloaders, mechanical and pneumatic conveying systems, and storage systems.
Smartec Srl	Italy	www.smartecsr.com	g2	Developes and manufactures equipment for the production of pellets: complete range of systems for biomass, both for private and business customers that intend to reuse their processing waste.
Sonnys Maskiner AB	Sweden	www.sonnys.se	g3mpb	Manufactures boilers up to 350 kW for burning different kinds of biomass
SPC Sweden Power Chipper	Sweden	www.pelletpress.com	g1, g2	Provides complete solutions for small scale pellets production.
Spilling Energi Systeme GmbH	Germany	www.spilling.de	g5, g8	Supplies overall solutions, from individual small CHP-units, steam or gas expansion engines and turbines to complex overall systems
Standardkessel GmbH	Germany	www.standardkessel.de	g3	Supplier of turnkey power plants and components for industrial and municipal energy supply. Application for biomass, recycling material, waste heat or primary fuels.
Stela Laxhuber GmbH	Germany	www.stela.de	g6	Provides the suitable drier solution for the most various products and applications and have specialized over the last years in producing sawdust driers for pelletizing plants.
Stirling Biopower	USA	www.stirlingbiopower.com	g3	Manufactures stirling engine for hot air, gaseous or liquids suitable for biomass feed stock and more.
Stolz S.A.	Spain	www.stolza.com	g2, g7	Manufactures and installs machinery for bulk solids including storage silos, mechanical and pneumatical handling, port silos and more.
Strabag Umwelttechnik GmbH	Germany	www.strabag-umwelttechnik.com	g9	Specialised in the fields of landfill construction and operation, material flow management, environmental remediation and plant engineering and construction
Strebelwerk GmbH	Austria	www.strebel.at	g2	Provides heating equipment solutions.
Sugimat S.L.	Spain	www.sugimat.com	g7	Design and construction of total plants as well as combustion units, burners, furnaces, boilers, gas cleaning devices, dryers and more.
SunCoal Industries GmbH	Germany	www.suncoal.de	g2	Develops, builds and operates facilities that refine organic waste into SunCoal® biocoal with the patented CarboREN® technology based on hydrothermal carbonization, for use in generating bio-energy.
Swebo Bioenergy AB	Sweden	www.swebo.com	g3	Supplies bioenergy solutions for all types of solid fuels, sizes from 4 kW to 4 MW. Product BioTherm can burn more demanding fuels, such as horse manure. Provides turnkey heating plants 100–1000 kW and mobile heating units.
Swedish Exergy AB	Sweden	www.swedishexergy.com	g5, g6	Supplier of VOC/emission free and energy efficient industrial drying solutions for biomass, sludge, waste to energy plants – Exergy® steam dryer, air stream dryer, bed dryer, automation systems, heat recovery systems



Swiss Combi - W.Kunz dryTec AG	Switzerland	www.swisscombi.ch	g6	Supplier of industrial dryers for biomass: low temperature belt dryers, superheated steam dryers, drum dryers and heat recovery units for drum dryers.
T.A.M.A AERNOVA S.p.A	Italy	www.tamaaernova.com	g4	Designs, manufactures and supplies products for air filtration and purification from dust, fumes and gases derived from different stages of industrial processes.
Taim Weser S.A	Spain	www.taimweser.com	g3,g7	Provides efficient turnkey solutions in the business of: bulk material handling, heavy and specialised lifting equipment, waste treatment and renewable energy
Tamtron Oy	Finland	www.tamtron.fi	g5	Producer of digital, dynamic and onboard weighing equipment, vehicle PC and data handling systems
Tana Oy	Finland	www.tana.fi	g1,g2	Specialized in cutting edge technology in solid waste management combine with control and monitoring systems.
Tatano S.n.c.	Italy	www.tatano.it	g3	Supplier of biomass boilers, from 18 kW to 581 kW for domestic and agricultural sector.
Teccon Konstruktionen GmbH	Austria	www.teccon.at	g2	Supplier of standardized PELLET.TOWER pellet production modules (2.5 to 15 tons per hour) offers consulting engineering services for the entire life cycle of wood pellet plant projects.
Terex Environmental Equipment	USA	www.terex.com	g1,g2	Designs and manufactures wood processing, biomass and recycling equipment. The offer for the large scale biomass producer and recycling industries includes whole tree chippers, horizontal grinders, trommels, slow speed and medium speed waste shredders, waste handlers, windrow turners and recycling screens with spaleck technology.
Thermax Europe Ltd	UK	www.thermax-europe.com	g3, g8, g9	Providing a range of engineering solutions to the energy and environment sectors. Offers solutions in heating and cooling, using absorption technology and boilers.
Thermostahl Solar	Greece	www.thermostahlsolar.com	g3	Manufactures biomass heating systems and solar water heaters
TMG Impianti S.p.A	Italy	www.tmgimpianti.it	g7	Manufactures the complete range of packing systems, including palletizers
Tomal	Sweden	www.tomal.se	g5, g7	Manufactures a multi-screw feeders, metering installation, big bag dischargers and pneumatic conveying system.
Topling	Italy	www.topling.it	g3	Manufactures biomass fuelled boiler and stoker products with sizes 15 - 2000 kW.
Torkapparater	Sweden	www.torkapparater.se	g6	Supplies turnkey systems for drying, cooling, pyrolysis and other thermal processing of solid materials
Tramco Europe Ltd	UK	www.tramcoeurope.com	g7	Designs and manufactures complete line of chain conveyors, enclosed belt conveyors, specially designed conveyors and conveyor conversions
Transmanut	France	www.transmanut.com	g7	Provides trailers and accessories to handle and transport biomass.
TransRental UAB	Lithuania	www.transrental.lt	g2,g6	Provides wood processing, forestry, utility and construction equipment, wood-cutting machines and logs debarking equipment both as sales and rental.
Triogen NL	Netherlands	www.triogen.nl	g6,g8	ORC manufacturer and supplier. Provider of turnkey solutions for the utilization of waste heat flows between 500 kWth and 5 MWth
TSI Inc	USA	www.tsi-inc.net	g6, g7	Designs and builds equipment for highly automated plants in the engineered wood industry. Systems include single pass rotary dryers, finishing lines and green/dry bins.
Turboden S.p.A	Italy	www.turboden.com	g8	Designs, manufactures, brings to market and maintains Organic Rankine Cycle (ORC) turbogenerators for the generation of heat and electrical power from renewable sources, including solar energy, biomass, geothermal and waste heat.
UAS Canada Inc	Canada	www.uas.bc.ca	g6,g7	Provides bulk handling and storage, process control, mixing, drying, cooling, packaging, waste management systems and automated feed milling systems.
Ulma AB	Sweden	www.ulma.se	g3, g7	Manufactures domestic and light commercial pellet burners, boilers and forced-air furnace ideal space heating for garages, workshops, air plane hangars, greenhouses, warehousing etc. Also fully automatic transport-system of pellets up to 50 m.
Unica Term GmbH	Austria	www.unicaterm.com	g3	Designs and manufactures pellets heating products for domestic and industrial sector.
Uniconfort S.r.l	Italy	www.uniconfort.com	g3	Manufacturer of heating systems including compatible boilers, air generators, grinders.
Universal Refiner Corporation	USA	www.universalrefiner.com	g1	Manufacturer of stationary and portable grinders for the sawmill and pulpmill industry.
UOP LLC, Honeywell	USA	www.uop.com	g9	Provider of process technology and services to the refining and petrochemical industries. Supplier of catalysts to the processing industry. Supplier of molecular sieve adsorbents.
Urbas Maschinenfabrik GmbH	Austria	www.urbas.at	g3	Operates in three main business fields, steel construction, steel hydraulic engineering and energy technology. Established over 1000 plants throughout Europe with power ratings ranging from 500kW to 30MW
VAI Advanced Packaging Technology	Italy	www.vai-packaging.it	g7	Manufacturer of automatic and semiautomatic packaging machines for wood pellets and other products.application for small to large scale pellet production
Valmet Corporation	Finland	www.valmet.com	g3	Developer and supplier of services and technologies for the pulp, paper and energy industries
Valtra	Finland	www.valtra.com	g1	Manufacturer tractors for multiple use: for forestry sector, peat and sugarcane harvesting, municipal use
Vapor Finland Oy	Finland	www.vapor.fi	g3	Provides boiler plants, biosolutions, hot water boilers, steam boilers, pressure equipment.
VAS Energy Systems GmbH	Austria	www.vas.co.at	g3, g8	Designs and manufactures systems for heating and power units in the range of 2 MW to 25 MW for private, industrial and public customers.
Vecoplan AG	Germany	www.vecoplan.com	g2	Develops, produces and markets machinery and plants for the resource and recycling industry to shred, grind, convey and process wood, biomasses, plastics, paper, residential and commercial waste, and more.
Veljekset Ala-Talkkari Oy	Finland	www.ala-talkkari.fi	g3	Manufacturer of heating boilers and solid fuel feeding devices for bio heating. Provides ready built heating centrals in size category 30kW – 1MW
Ventil - Engenharia do Ambiente, Ltd	Portugal	www.ventil.pt	g3	Manufacturer of biomass boilers.
VEP Fördertechnik Ges.m.b.H	Austria	www.vep.at	g3, g7	Manufacturer of plant in the branches waste treatment and fuel technology. Provides waste treatment solutions, fuel logistics for cogeneration plants, conveying plants, hook-lift containers
Vermeer Manufacturing Company	USA	www.vermeer.com	g1 g2	Producer of equipment for agro and forestry industry
Vibrafloor	France	www.vibrafloor.com	g7	Supplies modular live floors 'Vibrafloor' for the automatic reclaiming of all bulk biomass from silos, containers, railway cars, ships etc.
Vigan Engineering S.A.	Belgium	www.vigan.com	g7	Manufacturer of bulk materials handling and storage systems in ports and agri. industries. Provides mobile pneumatic conveyor or vacuators, mechanical and pneumatic continuous unloaders and loaders for vessels to post-Panamax.
Vitor Cardoso Lda	PORTUGAL	www.vicort.com	g1	Develops and manufactures harvester heads.
Vogelbusch Biocommodities GmbH	Austria	www.vogelbusch-biocommodities.com	g9	Provides technology for the sugar and starch processing and the food industries - from raw material preparation down to the final product.
Von Roll Switzerland Ltd	Switzerland	www.vonroll.com	g3	Produces insulation products and systems for the power generation and electrical machinery industry.
Vortex	UK	www.vortexvalves.co.uk	g7	Offers solids and bulk handling components.
Vyncke N.V.	Belgium	www.vyncke.com	g3	Designs and builds clean energy plants burning biomass and SRF to produce steam, hot water, thermal oil and hot gas, with or without electrical power generation - thermal energy from 1 to 100MWth and electrical power from 0.5 to 15 MWee.
Vänertekno AB	Sweden	www.vanertekno.se	g3, g2, g7	Provides hot-air furnaces fired by wood waste, wood pellets or grain. Quickly heats large buildings, from 3,000 to 10,000 m3. Produces silos and feeding screws.
Wackerbauer Maschinenbau	Germany	www.wackerbauer.net	g7	Manufactures feeding equipment, offers pre-treatment of feedstock technology and separation equipment.
Walinga Inc	Canada	www.walinga.com	g7	Manufactures pneumatic conveyors and bulk feed transportation equipment.

Company	Country	Website	Code	Comment
Walki Group	Finland	www.walki.com	g6, g7	Manufactures strong, paper-based laminate perfect for protecting logging residue and increasing its calorific and financial value in a simple and convenient way. The cover can be delivered in 4 or 6 meters widths
WAM Group S.p.A	Italy	www.wamgroup.com	g7	Provides bulk solids handling & processing (bulk material handling, dust filtration, solids-liquid separation, mixing and vibration technology)
Warren & Baerg Manufacturing, Inc.	USA	www.warrenbaerg.com	g2	Manufactures destripping and grinding systems for agriculture and biomass applications, densifying/cubing systems and complete line of conveyors.
Weima Maschinenbau GmbH	Germany	www.weima.com	g2	Provides machines and briquetting presses for wood, the plastics and recycling industry and for the production of substitute fuels.
Weiss A/S	Denmark	www.weiss-as.dk	g3	Supplier of bio and waste boiler plants. Specialized in mid-size boiler equipment for district heating companies and process industry.
Weiss Kessel Anlagen und Maschinenbau GmbH	Germany	www.weiss-kessel.de	g3	Provides construction of boilers and combustion systems for solid fuels, especially wood wastes. Boiler power outputs range between 500 kW-60 MW.
Wellinkcaesar Timber Technology BV	Netherlands	www.wellinkcaesar.nl	g1	Producer of the “Dutch Dragon” professional high capacity wood chippers. PTO or engine powered.
Wellons FEI Corp	Canada	www.wellonsfei.ca	g3,g4,g6	Designs and manufactures a full range of products and can provide integrated packages combining wood-fired boiler systems and lumber dry kilns.
Weltec Biopower GmbH	Germany	www.weltec-biopower.de	g9	Provider of turnkey biogas plants made from stainless steel (waste to energy, sewage water treatment and agricultural plants)
WES Wood Energy Solutions	Ireland	www.woodenergysolutions.com	g3	Manufactures biomass boiler ranging in outputs from 15kW to 299kW
West Salem Machinery Co	USA	www.westsalem.com	g2	Provides fiber preparation and processing machinery as complete systems. Feeders, pre and post screeners, grinders, shredders, hammer mills.
Windhager Zentralheizung GmbH	Austria	www.windhager.com	g3	Provides high-quality boiler technology, heat generators also for complex combination systems.
Wood-Mizer Industries	USA	www.awmv.com	g7	Provides vertical thin-kerf sawmills, horizontal thin-kerf sawmills, board edgers, sawmill handling material, horizontal band resaws and moulders.
Woodland Biofuels Inc	Canada	www.woodlandbiofuels.com	g9	Builds and sell plants that convert waste streams into fuels, chemicals, pure water and electrical energy. Provides catalyzed pressure reduction technology.
Woodsman Chippers	USA	www.woodsmanchippers.com	g1	Designs and manufactures drum style, hand fed and biomass chippers. Production units available from 84-1200 hp.
WTS AB / World Thermal Service AB	Sweden	www.wtsab.com	g3	Specialised in converting oil, gas and coal fired boilers into profitable, efficient and future safe biomass combustion. Manufactures wood powder burners 2-50 MW.
Wuhan Cubic Optoelectronics Co.,Ltd	China	www.gassensor.com.cn	g5	Designs and manufactures infrared flue gas analyzer, infrared syngas analyzer, infrared biogas analyzer and automobile exhaust gas analyzer.
Wuxi Teneng Power Machinery Co., Ltd.	China	www.wxteneng.com	g3	Manufactures biomass gasification equipment, gas generator sets and other biomass equipments.
Wärtsilä Finland OY	Finland	www.wartsila.com	g3,g8	Provides complete lifecycle power solutions. Focuses on the marine and energy markets with products and solutions as well as services.
Xuzhou Orient Industry Co. Ltd	China	www.orient-biofuel.com	g2, g3, g6,	Provides pellet and briquette mills, pellets stoves, dryers, gasifiers, chipping, crushers, solar heating and more.
Ylistaron Terästäkomo Oy	Finland	www.palax.fi	g1	Produces forest machinery, a range of Palax firewood processors.
Ze.Pi Tecnologie srl	Italy	www.zeppi.it	g2	Manufacturer of pelleting presses, spare parts and equipment for complete wood and alternative energy and biomasses pelletizing lines.
Zhangqiu Fada Pellet Machinery Co., Ltd	China	www.fadajixie.com	g2	Manufactures pellet mills, hammer mills, mixers and crushers. Provides complete sets of feed, forest, organic fertilizer, and energy machinery.
Zhangqiu Yulong Machine Co., Ltd	China	www.woodpelletmill.net	g2	Provides three series of pellet mill, briquette press, crushers, hammer mill, mixer, cooler and pasture machinery.
Zhengyang Machinery Equipment Co., Ltd.	China	www.zyfarmmachine.com	g2	Manufactures charcoal briquette machines, biomass energy machines, environment protection equipment, farm machines and some other mechanical equipment.
Zhengzhou Alliance Trading Co., Ltd.	China	www.allance.com.cn	g2,g3	Manufactures and designs food machines, pellet machines, agriculture machines and industrial machines.
Zhengzhou Boiler Co., Ltd	China	www.zgindustrialboiler.com	g3	Experienced in boiler and pressure vessel design and manufacture
Zhengzhou Furui Mechanical Equipment Co., Ltd.	China	www.cnchinafree.cn	g1,g2	Produces hookah charcoal making machine,wood pallet making machine,samosa making machine,peanut butter machine,fruit juicer machine.
Zhengzhou Rephale Machinery Co., Ltd.	China	http://rephale.en.china.cn	g1,g2,g3	Manufactures food machinery, agricultural machinery, environmental protection machinery and feed machinery.
Zhengzhou Whirlston Trade Co., Ltd.	China	www.whirlstonmachinery.com	g1,g2	Specializes in the R&D and promotion of agriculture machines, food machine, briquette machine, poultry feed making machine.
Zilkha Biomass Energy	USA	www.zilkhabiomass.com	g2	Suppliers of direct-fired biomass-fueled presserised cogeneration unit to produce electricity and process heat. Modules range from 1-10 MWe.
Zuccato Energia Srl	Italy	www.zuccatoenergia.it	g6,g8	Designs, develops, manufactures and distributes the system for power production from renewable sources (turbogenerators up to 500 kWe based on the Low Temperature Organic Rankine Cycle, a particular closed-loop thermodynamic cycle which is ideally suited for the conversion of low/medium temperature (100-200°C) thermal sources into electric power.

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Swedish waste heat to power tech to boost Japanese biomass power plant

Sweden-headed cleantech developer Climeon AB has revealed that has recently signed an agreement with an undisclosed Japanese power producer with operations in biomass to supply its waste heat to power technology. Climeon’s first delivery will take place in the last quarter of 2017 and continue through 2018.

According to a statement, the solution will increase the efficiency of the plant by converting low-temperature heat to electricity at higher efficiency than previously possible, and at the same time contribute to achieving the sustainability goals set in 2015 to reverse climate change.

The Climeon system converts waste heat into 100 percent clean electricity. The solution is cost efficient, can be managed remotely, and is a sustainable solution for renewable and clean energy.

– Waste heat recovery is a large market in Japan with many foreign and local players present. With this order, we demonstrate that Climeon is bringing a unique offering to the market with a highly efficient solution at a competitive price level. Both biomass and geothermal are important renewable sources that can supply baseload power and therefore work as an alternative to coal and other fossil fuel based power plants said Ruben Haved Head of Geothermal Sales at Climeon in a statement.

Japan’s ratification of the sustainability goals set in 2015, alongside the move away from nuclear energy, has seen a dramatic increase in biomass power production in the country. The process of generating power from biomass is one that typically produces low-temperature waste heat.

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