

BOILERS: THERMAL WASTE UTILISATION

Thermal waste utilisation fuel type denotation: M – municipal, I – industrial, S – sludges and deposits, B – biomass,
BL – black liquor, furnace type denotation: S – stoker, RF – rotating furnace, F – fluidised bed, P – pulverized fuel

Pos	End user / Orderer	Fuel	Furnace	Boiler	Qty	Boiler capacity/ Steam pressure/ Temperature	Year
1	Niederbipp Paper Mili, Switzerland Von Roli, Switzerland	S	F	OS-16	1	16/2.45/220	1992
2	NVSA EMS Dottikon, Switzerland Von Roli, Switzerland	I,S	RF	OS-6	1	6/2.3/220	1993
3	Indaver, Belgia, Standard Fasel Lentjes, Holland	K	R	OS-43.5	1	43.5/4.0/400	1996
4	Valene, France TMC, France	M	F	OS-245	2	12/4.0/390	1996
5	Doulens, France TMC, France	M	F	OS-165	1	15/ 1.85/209	1996
6	Montyon, France TMC, France	M	F	OS-245	1	12/4.0/390	1996
7	MW Mannheim, Germany EVT, Germany (*)	M	S	OS-IOO	1	100 / 12.0 / 500	1996
8	AVG Hamburg, Germany Eisenwerk Baumgarte, Germany	I	RF	OF-35	2	35/3.0/380	1996
9	KVA Gamsen, Switzerland Preusag Noel, Germany	M	S	OS-20.5	1	20.5/4.5/400	1997
10	Buschhaus, Germany EVT, Germany	M	s	OS-71	2	71/4.0/400	1997
11	Vicarb, France GEC Alstom, France	nda	nda	OS-14	1	15/2.4/400	1997
12	Pirmasens, Germany Eisenwerke Baumgarte, Germany (*)	M	S	OS-39.5	2	40/4.0/400	1997
13	Bolton, United Kingdom Ansaldo V0lund, Denmark	M	S	OF-75	1	71/4.0/400	1998
14	Von Roli (*) Switzerland, Umea, Sweden	M	S	OS-75	1	75/4.0/400	1999
15	Nestle - ORBE, Switzerland TMC, France (*) (**)	I	S	OS-16	1	15/ 1.85/209	1999
16	TAN Numberg, Germany Von Roli, Switzerland (*)	M	S	OS-41	3	41/4.5/400	1999
20	Pfeiderer Industrie Gutersloch, Germany Aalborg Energie Technik AS, Denmark (**)	B, I	s	OS-60	1	60/7.0/455	2000
21	Pfaffenhofen, Germany Babcock&Wilcox V0lund, Denmark	M	s	OS-30	1	30 / nda / nda	2000
22	Slought Heat & Power, United Kingdom Babcock&Wilcox V0lund, Denmark	M	s	OS-72.9	1	72.9 / nda / nda	2000
23	Kungsbacka Energi AB, Sweden Kungsbacka Energi AB, Sweden	M	s	OS-6	1	6 MW	2000
24	Kronoply GmbH Heiligengrabe, Germany Aalborg Energie Technik AS, Denmark	M	s	OS-67	1	67 / 7.0 / 450	2001
25	Emmenspitz, Switzerland ABB Enertech, Switzerland (**)	M	s	OS-31.6	1	31.6/3.8/395	2001
26	Babcock&Wilcox Volund, Denmark Avesta, Sweden	I	s	OS-11.5	1	11.5 MW	2002
27	Esbjerg, Denmark Babcock&Wilcox V0lund, Denmark	M	s	OS-90.4	1	90.4 / nda / nda	2002
28	Von Roli, Switzerland (*), Evreux, France	M	s	OS-17	2	17/4.0/380	2002
29	MW Mannheim, Germany SEGHERS (SBT), Belgium (*) (**)	M	s	OS-81	1	81/2.8/275	2002
30	Sakab, Sweden, SEGHERS (SBT), Belgium (*) (**)	M	s	OS-47	1	47/4.1/400	2002
31	Hogdalen, Sweden Babcock&Wilcox Volund, Denmark	nda	S	OS-114.8	1	114.8/5.6/400	2003
32	Garstad, Sweden, Babcock&Wilcox Volund, Denmark	nda	s	OS-90.4	1	90.4/6.3/400	2003
33	Cantabria Spain Lurgi Germany (**)	M	s	OS-44.2	1	44.2 / 4.6/420	2004
34	Vattenfall Warne Uppsala, Sweden Von Roli, Switzerland (*) (**)	M	s	OS-IOO	1	100/2.0/212	2005
35	Afval Energie Bedrijf Amsterdam, Holland NEM, Holland	M	s	OS-101	1	100.8/16.2/465	2005
36	Allington, UK, MG Engineering Baumgarte, Germany (**)	M	RF ¹)	OS-62	3	62.3/6.5/420	2005
37	Weis, Austria, MARTIN, Germany (*) (**)	M	S	OS-98	1	98/4.0/400	2006
38	Sundsvall Sweden, Babcock&Wilcox Volund, Denmark	M	s	OS-70	1	70/7.0/440	2006
39	Garstad Sweden, Babcock&Wilcox Volund, Denmark	M	s	OS-90.4	2	90.4/5.8/400	2006
40	EVI Europark, Germany (*) (**) Visser&Smit Hanab Instalatie, Holland	M	s	OS-83	2	83 / 6.0 / 460	2006
41	HVC Dordrecht Abfallverbrennungsanlage, Holland, Visser & Smit Hanab Instalatie, Holland (*)	M	S	OS-94	1	94 / 4.2 / 400	2010
42	UIOM Baku, Azerbajdian CNIM ENGINEERS FZC, UAE	M	S	OS-33	2	33 / 4.0 / 400	2010
44	ABRG Arnoldstein Austria (*) (**) Assamer-Becker Recycling, Austria	M	F	WP-210	1	/ 1.6 / 201	2010
45	TRM Torino, Italia CNIM, France	M	S	OS-88	3	88/6.0/420	2010-2011
46	BMHKW Goch, Germany, Richard Kablitz & Mitthof GmbH, Germany	M	S	OS-32	1	32 / 6.5 / 485	2011

BOILERS: THERMAL WASTE UTILISATION

Thermal waste utilisation fuel type denotation: M – municipal, I – industrial, S – sludges and deposits, B – biomass,
BL – black liquor, furnace type denotation: S – stoker, RF – rotating furnace, F – fluidised bed, P – pulverized fuel

Pos	End user / Orderer	Fuel	Furnace	Boiler	Qty	Boiler capacity/ Steam pressure/ Temperature	Year
47	Roskilde, Denmark Martin GmbH, Germany	M	S	OSr-95	1	95/5.0/425	2011-2013
48	SITA, UK, Hitachi Zosen Inova AG, Switzerland	M	S	OSr-55.7	2	55.7/5.5/410	2011-2014
49	Wiessbaden, Germany, Richard Kablitz & Mitthof GmbH, Germany	M	S	OS-49	1	49 / 4.0 / 425	2011-2014
50	Viridor Waste Management, UK CNIM, France	M	S	OS-64	2	64/6.0/400	2012-2013
51	Biocel Paskov a.s. Czech Republik Lenzing AT - KS1, Austria	BL	S	OS-54.6	1	54.6 / 8.5 / 465	2013
52	Biocel Paskov a.s. Czech Republik Lenzing AT - RB1, Austria	BL	S	OS-145	1	145 / 8.5 / 485	2014
53	Buckinghamshire, England Hitachi Zosen Inova AG, Switzerland	M	S	OS-130	1	130/ 5.1 / 402	2014
54	Cleveland, England, Hitachi Zosen Inova AG, Switzerland	M	S	OS-59	1	59 / 4.5 / 410	2014
55	Babcock & Wilcox Denmark / Gloucester UK	M	R	.....	1	.....	2017
56	ZUO Szczecin, Poland Mostostal Warszawa, Poland/ TME	M	S	OS-34	2	34 / 4.0 / 400	2017
57	CNIM Francia Presuure parts	K	R	.....	1	.....	2019
58	CNIM Francia dla Belgrad Serbia. Pressure parts	K	R	.....	1	.....	2022
59	MARTIN Dania, Pressure parts	K	R	.....	1	.....	2023
60	VALMET Finlandia. Boiler for Jedlicze Refinery Poland	K	R	.....	1	.....	2023

*) basic design by RAFAKO S.A. according to the client's concept design

(**) erection included in the scope of the contract) wastes are combusted in rotating pre-furnace based on fluidised bed

BIOMASS FIRED BOILERS

Pos	End user / Orderer	Fuel	Furnace	Boiler	Qty	Boiler capacity/ Steam pressure/ Temperature	Year
1	Herbrechtingen, Germany Enprima Finland (**)	B	F	OS-54	1	54/9.0/520	2003
2	Eberhardzell Germany, Aalborg Energie Technik AS, Denmark (**)	B	S	OS-35	1	33.6/6.6/462	2003
3	Tembec, France Kvaerner, Finland (**)	B	F	Hybex	1	52.4/8.1/297	2004
4	SWL GmbH Bischofferode, Germany Austrian Energy & Environm., Austria (**)	B	F	OS-59	1	59.4/13.0/535 reheat 58.6 / 2.5 /535	2005
5	BHKW Salfelden Austria Richard Kablitz & Mitthof GmbH., Germany (*) (**)	B	S	OS-26.5	1	26.5/6.6/485	2005
6	Econoler Spain Vulcano Sadeca S.A. Spain	B	S	OS-25	1	35/5.2/403	2005
7	Real Hallein AG, Austria, Austrian Energy & Environment, Austria	B	F	OS-40	1	40.0/6.1/450	2006
8	Linz Strom GmbH, Austria AET Aalborg, Denmark	B	S	OS-41.8	1	41.8/6.6/462	2006
9	Funder Industrie GmbH, Austria AET Aalborg, Denmark	B	S	OS-41.8	1	59/7.9/455	2006
10	Garp Technicka Vercken, Sweden Babcock&Wilcox Volund, Denmark	B	S	OS-48	1	48/2.0/214	2006
11	Erda, Belgium Vyncke, Belgium	B	S	OS-40	1	40/6.6/455	2006
12	Unterbernbach, Germany (*) (**) Richard Kablitz & Mitthof, Germany	B	S	OS-55	1	55/6.7/485	2007
13	Kielce CHP Plant (*) (**)(on turn key basic)	B	S	OS-20	1	20 / 5.6 / 485	2008
14	RDF Plant Oostende, Belgium Baumgarte Boiler Systems GmbH, Germany	B	S	OS-88.3	1	88.3 / 4.2 / 402	2009
15	Jaworzno Power Plant, Poland	B	F	OFz-201	1	201 / 9.7 / 510	2012
16	Orleans, France, Aalborg Energie Technik a/s, Denmark	B	S	OS-46.5	1	46.5 / 12.2 / 525	2013-2014
17	Vielle Saint Girons, France Aalborg Energie Technik a/s, Denmark	B	S	OS-60	1	60 / 12.0 / 525	2013-2015
18	ORAFI, Chile, Richard Kablitz & Mitthof GmbH, Germany	B + coal	S	OS-60	1	60 / 7.6 / 485	2014
19	Stalowa Wola Power Plant, Poland	B	P	OP-120	1	120 / 7.4 / 500	2014
20	Wiessbaden, Germany	B	S	OS-49	1	49 / 4.2 / 425	2014
21	Chernomorsk, Ukraine / VYNCKE, Belgium	B	RF	OS-38	2	38,0 / 6,5 / 450	2020
22	Mangulade, Portugalia / VYNCKE, Belgium	B	RF	OS-116	1	116 / 6,5 / 487	2020