

KUBOTA Group Production Sites Data
(results of RY2015)

Data on KUBOTA production sites in Japan																									
Item	Business site		Hanshin Plant (Mukogawa, Marushima)		Hanshin Plant (Amagasaki)		Keiyo Plant (Funabashi, Distribution Center)		Keiyo Plant (Ichikawa)		Hirakata Plant		Okajima Business Center		Sakai Plant		Sakai Rinkai Plant		Utsunomiya Plant						
			Unit	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ						
INPUT																									
Energy			Crude oil equivalent KL	16,644	645,128	5,181	200,796	27,162	1,052,778	111	4,292	5,089	197,250	5,271	204,302	2,983	115,606	2,814	109,065	957	37,085				
	Fossil fuel		MWh	44,307	433,082	31,097	300,550	51,969	502,804	5,446	52,705	38,747	379,093	37,665	365,666	27,585	268,580	17,735	172,840	6,167	60,870				
	Purchased electricity		Crude oil equivalent KL	27,818	1,078,210	12,935	501,346	40,134	1,555,581	1,471	56,997	14,870	576,342	14,705	569,969	9,912	384,186	7,273	281,904	2,527	97,956				
Water usage		thousand m ³	795	224	1,074	16	196	71	116	58	83														
OUTPUT																									
CO ₂ emission		tons CO _{2e}	75,415	26,542	122,607	3,030	30,888	39,959	21,236	16,274	5,138														
Waste	Discharge amount	tons	11,151	5,262	25,049	127	2,981	13,759	2,303	906	321														
	Recycling ratio	%	99.9	99.9	99.9	99.7	100.0	100.0	99.7	98.2	99.4														
Exhaust gas ³	Main smoke and soot generating facilities ²		Melting furnaces			Heating furnaces			Melting furnaces			Heating furnaces			Melting furnaces			Drying furnaces			Boilers				
	SOx		Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	
	NOx		Total emission control and K-value control: m ³ N/h	1.17	0.004	Use of town gas with zero sulfur content			Total emission control	39.8	2.1	Use of town gas with zero sulfur content			Total emission control	2.859	0.600	1.177	0.121	Use of town gas with zero sulfur content			Concentration control	180	100
	Soot and dust		Concentration control: g/m ³ N	0.1	0.002	Concentration control	0.1	0.001	Concentration control	0.1	0.002	Total emission control			Concentration control	1.19	0.046	2.4	0.2	Concentration control	1.097	0.405	Concentration control	0.1	0.006
*1 Total emission control: Control value (including agreed value) by plant or facility and the measurement value. K-value control and concentration control: Control value (including agreed value) of major smoke and soot generating facilities and the measurement value (maximum value).																									
*2 Smoke and soot generating facilities: Those subject to the laws concerning emissions into the atmosphere.																									
Water discharge		thousand m ³	1,149	224	1,312	40	225	33	92	19	113														
Drainage ³	Public water areas		Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	
	pH		Minimum value, Maximum value	5.8-8.6	6.9, 7.8	—	—	5.0-9.0	6.3, 7.6	5.0-9.0	7.0, 7.7	5.8-8.6	6.8, 7.4	—	—	—	—	5.8-8.6	6.8, 8.3	5.8-8.6	6.7, 7.8				
	BOD		mg/L	30	8	—	—	—	—	60	—	25	20	—	—	—	—	30	5	25	8				
	COD		mg/L	20	7	—	—	20	5	60	6	25	7	—	—	—	—	30	13	—	—				
	Nitrogen		mg/L	120	9.1	—	—	20	5	70	9	120	4	—	—	—	—	120	36	—	—				
	Phosphorus		mg/L	16	0.5	—	—	2	0.4	7	1	16	0.7	—	—	—	—	16	3	—	—				
	Hexavalent chromium		mg/L	0.35	0.02	—	—	0.05	Less than 0.02	—	—	0.05	ND	—	—	—	—	0.5	ND	—	—				
	Lead		mg/L	0.1	0.01	—	—	0.1	ND	0.1	—	0.01	ND	—	—	—	—	0.1	ND	—	—				
	COD, total emission control		kg/day	97.44	13.62	—	—	110.5	46.9	4	0.2	37.95	5.20	—	—	—	—	3.3	0.8	—	—				
	Nitrogen, total emission control		kg/day	40.51	26.44	—	—	114.7	24.4	2.865	0.34	38.3	6.6	—	—	—	—	13.2	2.3	—	—				
Phosphorus, total emission control		kg/day	1.424	0.817	—	—	11.65	1.82	0.391	0.035	4.41	0.51	—	—	—	—	1.76	0.2	—	—					
Sewage lines		Control value	Maximum value, Minimum value	5.7-8.7	6.6, 8.2	5.7-8.7	6.6, 7.9	—	—	—	—	—	—	5.7-8.7	6.8, 8.2	5.0-9.0	6.7, 7.4	—	—	—	—	—	—		
Water discharge		thousand m ³	196	12	70																				
OUTPUT																									
CO ₂ emission		tons CO _{2e}	37,946	1,541	2,580																				
Waste	Discharge amount	tons	2,720	83	163																				
	Recycling ratio	%	99.8	99.3	97.6																				
Exhaust gas ³	Main smoke and soot generating facilities ²		Boilers			Boilers			Boilers			Boilers			Boilers			Boilers			Boilers				
	SOx		Unit	Control content	Control value	Measurement	Control content	Control value</																	

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Item	Business site	Kubota-ChemX (Sakai)		Kubota-ChemX (Odawara)		Kubota-ChemX (Tochigi)		KUBOTA Air Conditioner (Tochigi)		KUBOTA Precision Machinery		Nippon Plastic Industry		Kyushu KUBOTA Chemical	
INPUT															
Energy		Unit	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	
	Fossil fuel	Crude oil equivalent KL	97	3,757	102	3,938	26	1,014	257	9,950	650	25,206	79	3,059	
	Purchased electricity	MWh	13,630	133,032	27,106	262,580	20,751	199,923	2,578	25,343	13,320	129,343	14,889	144,246	
	Total	Crude oil equivalent KL	3,529	136,789	6,876	266,518	5,184	200,937	911	35,293	3,987	154,549	3,800	147,306	
Water usage		thousand m ³	16	31	275	67	17	189	7						
OUTPUT															
CO ₂ emission	CO ₂ emissions from energy sources	tons CO _{2e}	6,443	13,896	10,545	1,804	8,362	7,571	3,978						
Waste	Discharge amount	tons	26	90	93	171	448	24	10						
	Recycling ratio	%	99.8	99.6	99.9	99.9	100.0	99.4	99.9						
Exhaust gas ³	Main smoke and soot generating facilities ²	No smoke and soot generating facilities	No smoke and soot generating facilities	No smoke and soot generating facilities	Boilers	Use of town gas with zero sulfur content	No smoke and soot generating facilities								
	Unit														
	SOx	K-value control													
	NOx	Concentration control: ppm													
	Soot and dust	Concentration control: g/m ³ N													
*1 Total emission control: Con *2 Concentration control: Control value (including agreed value) of major smoke and soot generating facilities and the measurement value (maximum value).															
*2 Smoke and soot generating *3 Smoke and soot generating facilities: Those subject to the laws concerning emissions into the atmosphere.															
Water discharge	thousand m ³	16	10	275	67	10	163	4							
Drainage ³		Unit	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	
	pH	Minimum value, Maximum value	5.8-8.6	7.4	5.8-8.6	7.4 , 8.2	5.8-8.6	8.1	5.8-8.6	7.4 , 7.5	-	-	5.8-8.6	7.1	
	BOD	mg/L	25	10	60	3	20	2	20	10	-	-	160	3	
	COD	mg/L	25	13	60	3	-	-	-	-	-	-	160	0.8	
	Nitrogen	mg/L	60	-	120	0.7	60	0.8	-	-	-	-	-	-	
	Phosphorus	mg/L	8	-	16	0.1	1	0.2	-	-	-	-	-	-	
	Hexavalent chromium	mg/L	0.5	-	0.5	0.05	0.1	Less than 0.02	0.1	ND	-	-	-	-	
	Lead	mg/L	0.1	0.02	0.1	0.02	0.1	0.02	0.1	ND	-	-	0.1	0.02	
	COD, total emission control	kg/day	-	-	-	-	-	-	-	-	-	-	-	-	
	Nitrogen, total emission control	kg/day	-	-	-	-	-	-	-	-	-	-	-	-	
	Phosphorus, total emission control	kg/day	-	-	-	-	-	-	-	-	-	-	-	-	
Sewage lines	pH	Minimum value, Maximum value	-	-	-	-	-	-	-	-	No specific facilities				
	BOD	mg/L	-	-	-	-	-	-	-	-					
	COD	mg/L	-	-	-	-	-	-	-	-					
VOC emission	tons	-	-	-	-	-	9	-	-	-	-	-	-	-	
*3 Total emission control: Control value (including agreed value) by plant and the measurement value. Concentration control: Control value (including agreed value) by plant and the measurement value (maximum value).															

Data on KUBOTA Group Overseas production sites																	
Region		North America							Europe								
Item	Business site	Kubota Manufacturing of America Corporation		Kubota Industrial Equipment Corporation		Kubota Materials Canada Corporation		Kubota Baumaschinen GmbH		Kverneland Group Operations Norway AS		Kverneland Group Soest GmbH		Kverneland Group Nieuw-Vennep B.V.		Kverneland Group Kerteminde AS	
INPUT																	
Energy		Unit	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ			
	Fossil fuel	Crude oil equivalent KL	4,893	189,666	2,731	105,866	3,748	145,266	666	25,833	2,328	90,251	499	19,336			
	Purchased electricity	MWh	24,942	248,669	28,497	284,118	19,290	192,324	3,166	31,565	34,000	338,980	3,026	30,172			
	Total	Crude oil equivalent KL	11,309	438,335	10,062	389,984	8,792	337,590	1,481	57,398	11,074	429,231	1,277	49,508			
Water usage	thousand m ³	73	33	354	7	59	4	14	14	36							
OUTPUT																	
CO ₂ emission	CO ₂ emissions from energy sources	tons CO _{2e}	25,322	23,024	10,407	2,936	4,932	2,462	2,781	3,212							
Waste	Discharge amount	tons	3,608	1,865	4,342	686	346	410	362	496							
	Recycling ratio	%	94.1	94.0	89.4	96.7	100.0	90.1	93.0	98.2							
Exhaust gas ³	Main smoke and soot generating facilities ²	No smoke and soot generating facilities	Boilers	Use of town gas with zero sulfur content	No smoke and soot generating facilities												
	Unit																
	SOx	K-value control															

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(results of RY2015)

Data on KUBOTA Group Overseas production sites(Continued from page 2/3)

		Unit	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heatconversion GJ	Volume of use	Heatconversion GJ	Volume of use	Heatconversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ
Energy	Fossil fuel	Crude oil equivalent KL	18	700	233	9032	516	20006	6	225	1561	60496	262	10169	150	5811	63	2430
	Purchased electricity	MWh	618	6160	768	7654	1690	16848	64	637	11095	110622	2041	20346	2306	22991	119	1191
	Total	Crude oil equivalent KL	177	6860	430	16686	951	36854	22	862	4415	171118	787	30514	743	28801	93	3621

Water usage thousand m³ 1 4 8 0.4 111 6 5 0.4
OUTPUT

CO₂ emissions from energy & sources, tons CO_{2e}

Waste	Discharge amount	tons	78	136	199	3	874	38	127	—
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	Unit	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement				
Exhaust gas ¹	SOx	K-value control	Concentration control	—	—	(mg/Nm ³)	35	1	Concentration control	—	—	Concentration n control	—	—	(mg/m3)	100	5	(mg/m3)	550	0.8	(mg/m3)	550	5	Concentration control	—	—
	NOx	Concentration control: ppm	Concentration control	—	—	(mg/Nm ³)	350	44	Concentration control	—	—	Concentratio n control	—	—	(mg/m3)	400	79	(mg/m3)	240	27	(mg/m3)	240	6	Concentration control	—	—
	Soot and dust	Concentration control: g/m ³ N	Concentration control	—	—	(mg/Nm ³)	5	0.08	Concentration control	—	—	Concentratio n control	—	—	(mg/m3)	30	6	(mg/m3)	120	9	(mg/m3)	120	6	Concentration control	—	—

*1 Concentration control: Control value (including agreed value) of major smoke and soot generating facilities and the measurement value (maximum value)

*2 Smoke and soot generating facilities: Those subject to the laws concerning emissions into the atmosphere

Water discharge		thousand m ³		1		4		8		0.4		74		2		11		0.4	
Drainage ³	Public water areas	Unit		Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
		pH	Minimum value, Maximum value	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		BOD	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		COD	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Nitrogen	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Phosphorus	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Hexavalent chromium	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Lead	mg/L	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		COD, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		Nitrogen, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Sewage lines		Phosphorus, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		pH	Minimum value, Maximum value	(Sewage discharge)		(Sewage discharge)		5.5-9.5	6.9-7.7	(Sewage discharge)		6.5-9.5	7.2-8.7	6.0-9.0	7.7-8.0	6.0-9.0	6.9-8.2	(Sewage discharge)	
		BOD	mg/L					250	5			300	150	300	0	—	—		
		COD	mg/L					500	28			500	237	500	15	500	65		
		SS	mg/L					200	0			400	23	400	9	400	19		

VOC emission = tons = 6 = = =

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	Unit	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	Volume of use	Heat conversion GJ	
Energy	Fossil fuel	Crude oil equivalent KL	326	12622	1304	50545	1016	39395	308	11921	21	806	317	12282	302	11704	1496	57995
	Purchased electricity	MWh	8732	87057	12561	125229	37695	375818	8043	80187	2812	28035	3162	31525	3409	33985	4155	41426
	Total	Crude oil equivalent KL	2572	99679	4535	175774	10712	415213	2376	92108	744	28841	1130	43807	1179	45689	2565	99421

Water usage thousand m³ 59 143 54 16 15 30 28 12

CUTOFF	CO2 emissions from energy & sources ...	tons CO2e	5113	9385	21225	4825	1461	3394	3460	6736
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Waste	Discharge amount	tons	242	630	19008	672	168	76	351	966
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Main smoke and soot generating facilities² Paint booth Drying furnaces Heating furnaces Drying furnaces – – – Drying furnaces –

	Unit	Control content	Control value	Measuremen	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement	Control content	Control value	Measurement				
Exhaust gas ^{"1}	SOx	K-value control	(ppm)	60	53	Concentration control	60	Less than 2	(ppm)	500	1	(ppm)	60	2	Concentration control	—	—	Concentration control	—	—	(mg/m3)	800	14	Concentration control	—	—
	NOx	Concentration control: ppm	(ppm)	200	6	Concentration control	200	3	(ppm)	180	2	(ppm)	200	5	Concentration control	—	—	Concentration control	—	—	(mg/m3)	1000	168	Concentration control	—	—
	Soot and dust	Concentration control: g/m ³ N	(mg/m3)	400	17	Concentration control	320	11	(mg/m3)	15	2	(mg/m3)	320	3	Concentration control	—	—	Concentration control	—	—	(mg/m3)	350	91	Concentration control	—	—

Water discharge		thousand m ³	45		116		—		—		15		16		8		12		
	Unit	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement	Control value	Measurement
	pH	Minimum value, Maximum value	6.0-9.0	6.6-8.1	—	—	—	—	—	—	—	—	6.0-9.0	7.7-8.4	6.0-9.0	7.6-8.5	—	—	
	BOD	mg/L	225	7	—	—	—	—	—	—	—	—	50	36	50	35	—	—	

Parameter	Control	Emissions										Waste		Effluent		Waste water treatment plant
		1	2	3	4	5	6	7	8	9	10	11	12	13		
COD, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Nitrogen, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Phosphorus, total emission control	kg/day	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Sewage pH	Minimum value, Maximum value	6.0-9.0	6.2-8.0	5.5-9.0	5.5-8.1	5.5-9.0	7.0-8.0	5.5-9.0	7.0-7.8	5.5-9.0	7.3-7.9	—	—	—	—	

BOD	mg/L	450	220	500	90	20	17	20	2	500	61	—	—	—	(Transported to sewage plant)
COD	mg/L	650	282	750	196	120	90	120	50	750	181	—	—	—	
SS	mg/L	500	229	200	89	50	27	50	2	200	82	100	37	—	