

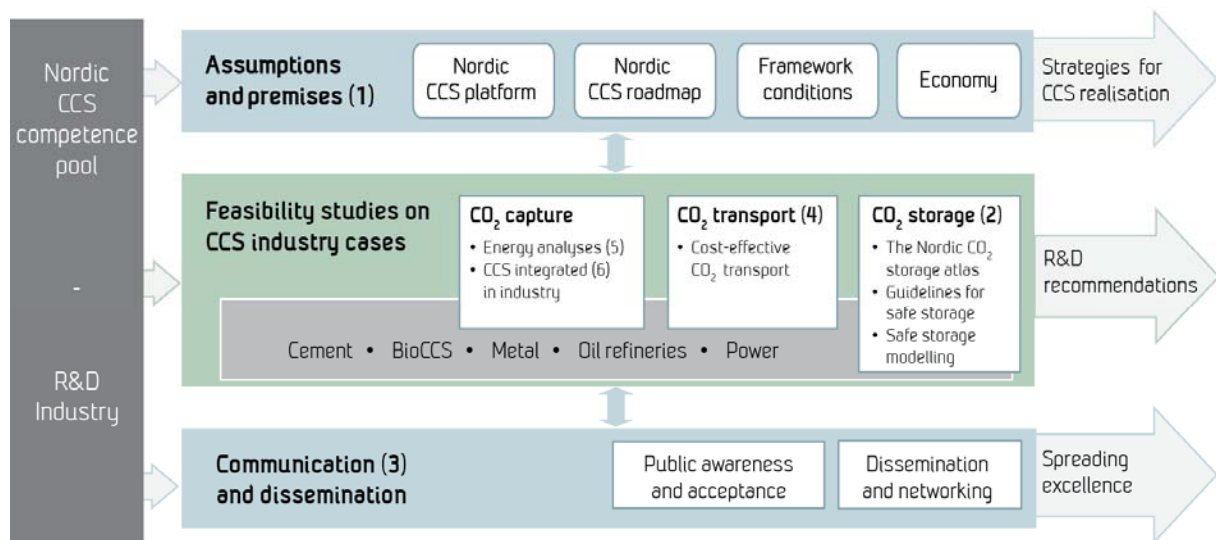
# Nordic point source CO<sub>2</sub> emissions

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**NORDICCS concept:**



**Partners:**



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# Summary

An overview of Nordic point source CO<sub>2</sub> emissions from sources emitting more than 100 000 t CO<sub>2</sub>/a has been made. The table is based on reported emissions from 2009. Both fossil-based and biogenic CO<sub>2</sub> emissions have been included. The table is partly based on annual reports from installations, partly on the European Pollutant Release and Transfer register (E-PRTR) and partly based on calculations.

**Keywords** CO<sub>2</sub> emissions, Nordic countries, fossil, biogenic

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## **About NORDICCS**

*Nordic CCS Competence Centre, NORDICCS, is a networking platform for increased CCS deployment in the Nordic countries. NORDICCS has 10 research partners and six industry partners, is led by SINTEF Energy Research, and is supported by Nordic Innovation through the Top-level Research Initiative.*

*The views presented in this report solely represent those of the authors and do not necessarily reflect those of other members in the NORDICCS consortia, NORDEN, The Top Level Research Initiative or Nordic Innovation.*

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## FINLAND

No	Facility	Sector	Activity	Country	LAT	LONG	Total CO2 (t/a)	Fossil CO2 (t/a)	Bio CO2 (t/a)
1	Rautaruukki Oyj, Raahen terästehdas	Iron and steel production	2.(b)	FI	64,65	24,44	3 414 113	3 414 113	
2	Neste Oil Oyj, Porvoon jalostamo	Oil and gas refineries	1.(a)	FI	60,31	25,52	3 080 000	3 080 000	
3	Stora Enso Oyj, Imatran tehtaat	Pulp and paper production	6.(a)	FI	61,22	28,82	2 705 824	169 656	2 536 168
4	Fortum Power and Heat Oy, Meri-Porin voimalaitos	Power & heat production	1.(c)	FI	61,63	21,39	2 279 886	2 279 886	
5	UPM-Kymmene Oyj, Pietarsaaren tehtaat	Pulp and paper production	6.(a)	FI	63,67	22,7	1 400 000	16 700	1 383 300
6	Oy Alholmens Kraft Ab, Pietarsaaren voimalaitos	Power & heat production	1.(c)	FI	63,7	22,7	1 367 917	666 392	701 525
7	UPM-Kymmene Oyj, Kaukaan tehtaat	Pulp and paper production	6.(a)	FI	61,09	28,25	1 530 188	154 188	1 376 000
8	Helsingin Energia, Vuosaaren voimalaitokset	Power & heat production	1.(c)	FI	60,22	25,17	1 649 642	1 649 642	
9	Stora Enso Oyj, Oulun tehdas	Pulp and paper production	6.(b)	FI	65	25,43	1 449 995	261 215	1 188 780
10	Metsä-Botnia Oy, Kemin tehdas	Pulp and paper production	6.(a)	FI	65,75	24,52	1 414 173	60 173	1 354 000
11	Fortum Power and Heat Oy, Naantalin voimalaitos	Power & heat production	1.(c)	FI	60,46	22,05	1 350 000	1 320 000	30 000
12	Stora Enso Oyj, Veitsiluodon tehtaat (massa + voimalaitos)	Pulp and paper production	6.(b)	FI	65,69	24,62	1 317 692	324 300	993 392
13	Metsä-Botnia Oy, Joutsenon tehdas	Pulp and paper production	6.(a)	FI	61,13	28,45	1 053 094	73 194	979 900
14	Metsä-Botnia Oy, Rauman tehtaat	Pulp and paper production	6.(a)	FI	61,11	21,47	1 390 000	86 700	1 303 300
15	Oulun Energia, Toppilan voimalaitokset	Power & heat production	1.(c)	FI	65,03	25,43	939 000	615 000	324 000
16	Vaskiluodon Voima Oy, Vaskiluoto 2-voimalaitos	Power & heat production	1.(c)	FI	63,04	21,78	1 174 718	1 174 718	
17	Helsingin Energia, Hanasaari B-voimalaitos	Power & heat production	1.(c)	FI	60,18	24,97	846 980	846 980	
18	UPM-Kymmene Oyj, Kymi	Pulp and paper production	6.(a)	FI	60,91	26,66	1 130 000	82 700	1 047 300
19	PVO-Lämpövoima Oy, Kristiinan voimalaitos	Power & heat production	1.(c)	FI	62,28	21,38	917 385	917 385	
20	Kanteleen Voima Oy, Haapaveden voimalaitos	Power & heat production	1.(c)	FI	64,12	25,41	396 000	372 000	24 000
21	Helsingin Energia, Salmisaaren voimalaitokset	Power & heat production	1.(c)	FI	60,16	24,9	941 000	941 000	
22	PVO-Lämpövoima Oy, Tahkoluodon voimalaitos	Power & heat production	1.(c)	FI	61,63	21,39	592 267	592 267	
23	Vaskiluodon Voima Oy, Seinäjoen turvevoimalaitos	Power & heat production	1.(c)	FI	62,74	22,82	862 528	733 466	129 062
24	Fortum Power and Heat, Inkoon voimalaitos	Power & heat production	1.(c)	FI	60,01	23,91	120 705	120 705	
25	FNsteel Oy Ab, Koverharin terästehdas	Iron and steel production	2.(b)	FI	59,88	23,2	510 180	510 180	
26	UPM-Kymmene Oyj, Tervasaaren tehtaat	Pulp and paper production	6.(a)	FI	61,26	24,02	300 344	208 344	92 000
27	Metsä-Botnia Oy, Äänekosken tehtaat	Pulp and paper production	6.(a)	FI	62,59	25,71	882 136	12 936	869 200
28	Fortum Power and Heat Oy, Suomenojan voimalaitos	Power & heat production	1.(c)	FI	60,15	24,71	817 000	817 000	
29	Stora Enso Oyj, Varkauden tehtaat	Pulp and paper production	6.(b)	FI	62,31	27,89	739 402	85 242	654 160
30	Jyväskylän Energiantuotanto Oy, Rauhalahden voimalaitos	Power & heat production	1.(c)	FI	62,24	25,81	668 471	445 821	222 650
31	Vantaan Energia Oy, Martinlaakson voimalaitos	Power & heat production	1.(c)	FI	60,28	24,83	762 657	762 657	
32	Tampereen Energiantuotanto Oy, Naistenlahden voimalaitos	Power & heat production	1.(c)	FI	61,51	23,77	623 399	540 399	83 000
33	Lahti Energia Oy, Kymijärven voimalaitos	Power & heat production	1.(c)	FI	60,99	25,72	677 596	677 596	
34	Outokumpu Stainless Oy, Tornion tehtaat	Iron and steel production	2.(b)	FI	65,76	24,19	375 649	375 649	

35	Finnsementti Oy, Paraisten sementtitehdas	Cement and lime production	3.(c)	FI	60,28	22,28	470 171	455 171	15 000
36	Stora Enso Enocell Oy, Enocell Oy:n sellutehdas	Pulp and paper production	6.(a)	FI	62,8	30,14	574 896	52 873	522 023
37	Kuopion Energia Oy, Haapaniemen voimalaitos	Pow er & heat production	1.(c)	FI	62,88	27,67	572 129	572 129	
38	Etelä-Savon Energia Oy, Pursialan lämmitysvoimalaitos, Mikkeli	Pow er & heat production	1.(c)	FI	61,67	27,29	405 195	123 953	281 242
39	Kymin Voima Oy, Kuusankosken voimalaitos	Pow er & heat production	1.(c)	FI	60,9	26,66	512 415	51 490	460 925
40	Rauman Voima Oy, Rauman Voima	Pow er & heat production	1.(c)	FI	61,12	21,48	390 960	64 860	326 100
41	Fortum Pow er and Heat Oy, Kontiosuon voimalaitos, Joensuu	Pow er & heat production	1.(c)	FI	62,59	29,82	449 144	153 644	295 500
42	Stora Enso Oyj, Kotkan tehtaat (Kotkamills)	Pulp and paper production	6.(b)	FI	60,46	26,96	420 990	218 472	202 518
43	Pori Energia Oy, Aittaluodon voimalaitos	Pow er & heat production	1.(c)	FI	61,48	21,81	290 856	156 027	134 829
44	Stora Enso Oyj, Anjalankosken tehtaat	Pulp and paper production	6.(b)	FI	60,72	26,84	361 647	321 651	39 996
45	Neste Oil Oyj, Naantalin erikoistuotejalostamo	Oil and gas refineries	1.(a)	FI	60,45	22,06	395 084	395 084	
46	Kainuun Voima Oy, Kajaanin höyry- ja lämpövoimalaitos	Pow er & heat production	1.(c)	FI	64,23	27,69	286 832	125 000	161 832
47	Borealis Polymers Oy, Olefiinituotanto	Production of chemicals	4.(a)	FI	60,3	25,52	429 918	429 918	
48	Finnsementti Oy, Lappeenrannan sementtitehdas	Cement and lime production	3.(c)	FI	61,03	28,17	168 886	168 886	
49	Stora Enso Oyj, Heinolan Flutingtehdas	Pulp and paper production	6.(a)	FI	61,18	26,08	349 615	157 651	191 964
50	Äänevoima Oy, Äänekosken voimalaitos	Pow er & heat production	1.(c)	FI	62,6	25,72	379 236	51 120	328 116
51	UPM-Kymmene Oyj, Jämsänkosken voimalaitos	Pulp and paper production	6.(b)	FI	61,91	25,16	365 000	103 000	262 000
52	UPM-Kymmene Oyj, Kaipolan tehtaat	Pulp and paper production	6.(b)	FI	61,81	25,23	289 978	72 578	217 400
53	Pohjolan Voima, Laanila, Oulun voimalaitos	Pow er & heat production	1.(c)	FI	65,03	25,52	291 305	261 305	30 000
54	Fortum Pow er and Heat Oy, Kirkniemen voimalaitos	Pow er & heat production	1.(c)	FI	60,19	23,94	294 000	187 000	107 000
55	Tampereen Energiantuotanto Oy, Lielahden voimalaitos	Pow er & heat production	1.(c)	FI	61,51	23,67	334 351	334 351	
56	Mylykoski Paper Oy, Mylykosken paperitehdas ja voimalaitos, Vamyr Oy	Pulp and paper production	6.(b)	FI	60,77	26,77	281 571	105 795	175 776
57	Fortum Pow er and Heat Oy, Uimaharjun voimalaitos	Pow er & heat production	1.(c)	FI	62,8	30,14	168 283	1 881	166 402
58	Stora Enso Oyj, Sunila Oy:n sellutehdas	Pulp and paper production	6.(a)	FI	60,49	26,95	237 483	15 551	221 932
59	Porin Prosessivoima Oy, Kaanaan voimalaitos	Pow er & heat production	1.(c)	FI	61,57	21,55	568 240	332 934	235 306
60	Rovaniemen Energia Oy, Suosiolan voimalaitos	Pow er & heat production	1.(c)	FI	66,49	25,67	281 249	235 249	46 000
61	M-Real Oyj, Simpeleen tehdas	Pulp and paper production	6.(b)	FI	61,43	29,34	261 000	82 900	178 100
62	Mäntän Energia Oy, Mäntän voimalaitos	Pow er & heat production	1.(c)	FI	62,03	24,64	196 405	149 405	47 000
63	Nordkalk Oyj Abp, Tytyrin kalkkitehdas	Cement and lime production	3.(c)	FI	60,26	24,06	158 000	158 000	
64	Vattenfall Lämpö Oy, Hämeenlinnan Vanajan voimalaitos	Pow er & heat production	1.(c)	FI	60,97	24,5	197 391	141 391	56 000
65	Savon Sellu Oy, Savon sellu	Pulp and paper production	6.(b)	FI	62,94	27,72	272 504	104 504	168 000
66	M-real Oyj, Kyro voimalaitos	Pulp and paper production	6.(b)	FI	61,66	23,18	166 021	166 021	
67	Oy Kokkola Pow er Ab, Kokkolan voimalaitos	Pow er & heat production	1.(c)	FI	63,86	23,04	146 000	66 800	79 200
68	Järvi-Suomen Voima Oy, Savonlinnan voimalaitos	Pow er & heat production	1.(c)	FI	61,86	28,92	161 053	21 174	139 879
69	Lappeenrannan Energia Oy, Mertaniemen voimalaitos	Pow er & heat production	1.(c)	FI	61,08	28,17	114 350	114 350	
70	Kotkan Energia Oy, Hovinsaaren voimalaitos	Pow er & heat production	1.(c)	FI	60,47	26,91	203 947	98 447	105 500
71	Ekokem Oy Ab, Riihimäen toimipiste	Waste treatment or incineration	5.(a)	FI	60,77	24,82	236 000	236 000	
72	Kokkolan Voima Oy, Kokkolan lämmitysvoimalaitos	Pow er & heat production	1.(c)	FI	63,85	23,05	151 000	146 000	5 000

73	Järvi-Suomen Voima Oy, Ristiinan voimalaitos	Power & heat production	1.(c)	FI	61,47	27,27	142 166	1 147	141 019
74	Lahti Energia Oy, Heinolan voimalaitos	Power & heat production	1.(c)	FI	61,19	26,06	123 944	2 072	121 872
75	SMA Mineral Oy, Röyttän Kalkkitehdas	Cement and lime production	3.(c)	FI	65,76	24,15	101 846	101 846	
76	Savon Voima Lämpö Oy, Iisalmen voimalaitos	Power & heat production	1.(c)	FI	63,58	27,19	111 391	69 391	42 000
77	Nordkalk Oyj Abp, Raahen kalkkitehdas	Cement and lime production	3.(c)	FI	64,65	24,44	146 532	146 532	
78	Tornion Voima, Tornion voimalaitos	Power & heat production	1.(c)	FI	65,76	24,16	262 186	192 186	70 000
79	Jyväskylän Voima Oy, Keljonlahti	Power & heat production	1.(c)	FI	62,24	25,81	713 278	600 000	113 278
80	Porvoon Energia Oy, Tolkkisten höyryvoimalaitos	Power & heat production	1.(c)	FI	60,33	25,58	113 000	714	112286
81	Kaukaan Voima Oy	Power & heat production	1.(c)	FI	61,33	28,1	774 983	150 000	624983
82	Oy Metsä-Botnia Ab, Kaskisten tehdas	Pulp and paper production	6.(b)	FI	61,09	28,25	240 000	5 560	234 440
83	PVO Lämpövoima Oy, Tahkoluodon voimalaitos	Power & heat production	1.(c)	FI	61,46	21,41	592 000	592 000	
84	VAPO OY, Forssan Voimalaitos	Power & heat production	1.(c)	FI	60,79	23,58	122 000	54 800	67 200

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## DENMARK

No	Facility	Sector	Activity	Country	LAT	LONG	CO2 (t/a)	FOSSIL CO2 (t/a)	BIO CO2 (t/a)
1	DONG Energy A/S - Asnæsværket	Power & heat production	1.(c)	DK	55,7	11,07	2 430 000	2 430 000	0
2	DONG Energy A/S - Avedøreværket	Power & heat production	1.(c)	DK	55,6	12,48	2 528 128	1 772 512	755 616
3	Aalborg Portland	Cement and lime production	3.(c)	DK	57,1	9,97	1 500 000	1 500 000	0
4	Vattenfall A/S Nordjyllandsværket	Power & heat production	1.(c)	DK	57,1	10,04	2 380 000	2 380 000	0
5	Dong Energy A/S Studstrupværket	Power & heat production	1.(c)	DK	57,1	9,97	2 751 070	2 620 000	131 070
6	DONG A/S Enstedværket	Power & heat production	1.(c)	DK	55	9,44	1 898 194	1 720 000	178 194
7	DONG A/S - Esbjergværket	Power & heat production	1.(c)	DK	55,5	8,45	1 320 000	1 320 000	0
8	Vattenfall A/S Fynsværket	Power & heat production	1.(c)	DK	55,4	10,4	2 011 306	1 960 000	51 306
9	Vattenfall A/S Amagerværket	Power & heat production	1.(c)	DK	55,7	12,62	1 776 386	1 670 000	106 386
10	DONG Energy A/S - Stigsnæsværket	Power & heat production	1.(c)	DK	55,2	11,25	216 000	216 000	0
11	Tyra feltet	Offshore oil and gas activities	1.(g)	DK	55,6	4,9	580 000	580 000	0
12	Dan feltet	Offshore oil and gas activities	1.(g)	DK	55,4	5,1	515 000	515 000	0
13	VS Vestforbrænding	Waste treatment or incineration	5.(a)	DK	55,7	12,42	635 383	635 383	0
14	DONG A/S, Skærbækværket	Power & heat production	1.(c)	DK	55,5	9,61	836 000	836 000	0
15	Statoil A/S raffinaderi	Oil and gas refineries	1.(a)	DK			500 000	500 000	0
16	A/S Dansk Shell - Raffinaderiet	Oil and gas refineries	1.(a)	DK	55,6	9,75	426 000	426 000	0
17	Gorm feltet	Offshore oil and gas activities	1.(g)	DK	55,6	4,8	334 000	334 000	0
18	Amagerforbrænding	Waste treatment or incineration	5.(a)	DK	55,7	12,62	491 671	491 671	0
19	DONG Energy A/S - H.C. Ørstedsværket	Power & heat production	1.(c)	DK	55,7	12,55	402 750	402 750	0
20	Herningværket	Power & heat production	1.(c)	DK	56,1	9,01	338 105	64 745	273 360
21	Energi Randers Production A/S	Power & heat production	1.(c)	DK	56,5	10,03	402 696	158 000	244 696
22	Maabjergværket	Waste treatment or incineration	5.(a)	DK	55,5	9,62	278 780	190 346	88 434
23	DONG Energy A/S - Svanemølleværket	Power & heat production	1.(c)	DK	55,7	12,58	179 573	179 573	0
24	Affaldscenter Aarhus - Forbrændingsanlægget	Waste treatment or incineration	5.(a)	DK	56,2	10,16	256 709	256 709	0
25	L90 Affaldsforbrænding	Waste treatment or incineration	5.(a)	DK	55,5	8,51	246 844	246 844	0
26	Syd Arne feltet	Offshore oil and gas activities	1.(g)	DK	56	4,2	190 000	190 000	0
27	VS Kara Affaldsforbrændingsanlæg	Waste treatment or incineration	5.(a)	DK	55,6	12,12	207 266	203 798	3 468
28	Kommunekemi A/S	Waste treatment or incineration	5.(a)	DK	55,3	10,81	184 965	184 965	0
29	VS Reno Nord	Waste treatment or incineration	5.(a)	DK	57	10,01	212 878	212 878	0
30	Silkeborg KRAFTVARMEVÆRK A/S	Power & heat production	1.(c)	DK	56,2	9,56	195 000	195 000	0
31	Koeg Kraftvarmeværk	Waste treatment or incineration	5.(a)	DK	55,5	12,19	127 175	593	126 582
32	VATTENFALL A/S Hillerød Kraftvarmeværk	Power & heat production	1.(c)	DK	55,9	12,31	138 000	138 000	0
33	VS Nordforbrænding	Waste treatment or incineration	5.(a)	DK	55,9	12,49	159 108	116 472	42 636
34	Sønderborg Kraftvarmeværk	Waste treatment or incineration	5.(b)	DK	54,9	9,78	134 319	133 503	816
35	Halfdan feltet	Offshore oil and gas activities	1.(g)	DK	55,6	5	98 000	98 000	0
36	Viborg Kraftvarmeværk A/S	Power & heat production	1.(c)	DK	56,5	9,39	115 000	115 000	0
37	VS Fasan - Næstved Kraftvarmeværk	Waste treatment or incineration	5.(a)	DK	55,2	11,73	119 274	119 274	0
38	Dalum Papir	Pulp and paper production	6.(b)	DK	55,4	10,37	125 460	5 100	120 360
39	Maxit Hinge	Cement and lime production	3.(c)	DK	56,4	10,04			

40	Kolding Forbraendingsanlaeg	Waste treatment or incineration	5.(a)	DK	55,5	9,45	143 337	141 807	1 530
41	REFA	Waste treatment or incineration	5.(a)	DK	54,8	11,88	135 977	135 977	0
42	Novo Nordisk A/S - Kalundborg	Production of chemicals	4.(e)	DK	55,4	11,6	67 000	67 000	
43	Grenaa Kraftvarmevaerk	Power & heat production	1.(c)	DK	56,4	10,91	103 956	48 162	55 794
44	Kavo VS Energien+Slagelse Kraftvarmevaerk	Waste treatment or incineration	5.(a)	DK	55,4	11,35	31 023	28 473	2 550
45	Nordic Sugar Nakskov	Other	8.(b)	DK	54,8	11,14	132 000	132 000	0
46	Siri feltet omfattende anlæg på Siri platformen	Offshore oil and gas activities	1.(g)	DK	56,4	4,8	226 000	226 000	0
47	AarhusKarlshamn Denmark A/S	Other	8.(b)	DK	56,1	10,13	98 065	98 065	0
48	Nordic Sugar Nykøbing A/S	Other	8.(b)	DK	54,8	11,88	110 000	110 000	0



## ICELAND

No	Facility	CO2 (t/a)	FOSSIL CO2 (t/a)	BIO CO2 (t/a)	Sector	Activity	Country	Detailed description	LAT	LONG
1	Alcoa Fjarðaál	523 000	523 000	0	Non-ferrous metal production	2.(e)	IS	Aluminium	65,02	-14,13
2	Nordural Grundartangi	419 000	419 000	0	Non-ferrous metal production	2.(e)	IS	Aluminium	64,35	-21,78
3	Elkem Iceland	342 000	342 000	0	Iron and steel production	2.(e)	IS	Ferrosilicon	64,35	-21,78
4	Alcan Iceland	278 000	278 000	0	Non-ferrous metal production	2.(e)	IS	Aluminium	64,05	-22,03

## NORWAY

No	Facility	Total CO2 (t/a)	FOSSIL CO2 (t/a)	BIO CO2 (t/a)	Sector	Activity	Country	LAT	LONG
1	STATOIL ASA, Mongstad	1 550 000	1 550 000	0	Oil and gas refineries	1.(a)	NO	60,81	5,03
2	Hammerfest LNG	805 000	805 000	0	Oil and gas refineries	1.(a)	NO	70,69	23,6
3	Statoil ASA Osebergfeltet	1 063 000	1 063 000	0	Offshore oil and gas activities	1.(g)	NO	60,49	2,83
4	Gassco AS, Kårstø	1 130 000	1 130 000	0	Oil and gas refineries	1.(a)	NO	59,28	5,52
5	Statoil ASA Gullfaksfeltet	975 000	975 000	0	Offshore oil and gas activities	1.(g)	NO	61,18	2,19
6	Statoil ASA Åsgardfeltet	1 030 000	1 030 000	0	Offshore oil and gas activities	1.(g)	NO	65,1	7,5
7	ConocoPhillips Skandinavia AS Ekofiskområdet	1 024 000	1 024 000	0	Offshore oil and gas activities	1.(g)	NO	56,5	3,2
8	Naturkraft AS, Kårstø	1 020 000	1 020 000	0	Production of electricity	1.(c)	NO	59,28	5,52
9	Norcem A.S., Brevik	927 000	825 000	102 000	Cement and lime production	3.(c)	NO	59,06	9,69
10	Statoil ASA Statfjordfeltet	576 000	576 000	0	Offshore oil and gas activities	1.(g)	NO	61,25	1,85
11	Statoil ASA Sleipnerfeltet	865 000	865 000	0	Offshore oil and gas activities	1.(g)	NO	58,5	1,7
12	Yara Norge AS, Yara Porsgrunn	815 000	815 000	0	Production of chemicals	4.(c)	NO	59,12	9,62
13	Statoil ASA Troll B og C	689 000	689 000	0	Offshore oil and gas activities	1.(g)	NO	60,6	3,8
14	Hydro Aluminium AS Sunndal	530 000	530 000	0	Non-ferrous metal production	2.(e)	NO	62,36	8,38
15	Statoil ASA Snorrefeltet	486 000	486 000	0	Offshore oil and gas activities	1.(g)	NO	61,5	2,3
16	Hydro Aluminium AS Karmøy	318 000	318 000	0	Non-ferrous metal production	2.(e)	NO	59,15	5,14
17	NORETYL AS	0			Production of chemicals	4.(a)	NO	59,05	9,68
18	NORCEM AS, Kjøpsvik	429 000	409 000	20 000	Cement and lime production	3.(c)	NO	68,69	16,21
19	Statoil ASA Heidrunfeltet	425 000	425 000	0	Offshore oil and gas activities	1.(g)	NO	65,3	7,3
20	ESSO NORGE AS, Slagentangen	349 000	349 000	0	Oil and gas refineries	1.(a)	NO	59,18	10,31
21	Finnfjord AS	179 000	179 000	0	Iron and steel production	2.(d)	NO	69,23	17,98
22	Trelleborg Offshore Norway AS	0			Production of chemicals	4.(a)	NO	59,76	10,01
23	Hydro Aluminium AS Årdal, Årdal Metallverk	314 000	314 000	0	Non-ferrous metal production	2.(e)	NO	62,04	5,29
24	ERAMET TITANIUM & IRON AS, Tyssedal	248 000	247 000	1 000	Iron and steel production	2.(b)	NO	60,11	6,55
25	Marathon Petroleum Company Alvheim	194 000	194 000	0	Offshore oil and gas activities	1.(g)	NO	59,3	2
26	PETERSON LINERBOARD AS, Moss	288 000	51 600	236 400	Pulp and paper production	6.(b)	NO	59,44	10,67
27	StatoilHydro Tjeldbergodden Metanolfabrikk	315 000	315 000	0	Production of chemicals	4.(b)	NO	63,24	8,39
28	Alcoa Mosjøen	409 000	409 000	0	Non-ferrous metal production	2.(e)	NO	65,5	13,12
29	Statoil ASA Visundfeltet	254 000	254 000	0	Offshore oil and gas activities	1.(g)	NO	61,3	2,4
30	Elkem ASA Bremanger	186 000	146 000	40 000	Production of chemicals	4.(b)	NO	61,48	5,25
31	Borregaard Ind. Ltd., Cellulosesektor	272 000	176 000	96 000	Pulp and paper production	6.(a)	NO	59,28	11,11
32	Eramet Norway Kvinesdal AS	170 000	170 000	0	Iron and steel production	2.(d)	NO	58,2	7,12
33	ERAMET NORWAY AS, Sauda	169 000	169 000	0	Iron and steel production	2.(d)	NO	59,41	6,26
34	Bp Norge AS Valhallfeltet	218 000	218 000	0	Offshore oil and gas activities	1.(g)	NO	56,3	3,4
35	Elkem Salten	183 000	137 000	46 000	Production of chemicals	4.(b)	NO	68,44	16,16
36	Sør-Norge Aluminium	161 000	161 000	0	Non-ferrous metal production	2.(e)	NO	59,86	5,75
37	FESIL ASA, Holla Metall	136 000	115 000	21 000	Production of chemicals	4.(b)	NO	63,17	9,05
38	Elkem Thamshavn AS	155 000	128 000	27 000	Production of chemicals	4.(b)	NO	63,32	9,88
39	Statoil ASA Nornefeltet	323 000	323 000	0	Offshore oil and gas activities	1.(g)	NO	66	8,1

40 Statoil ASA Granefeltet	227 000	227 000	0	Offshore oil and gas activities	1.(g)	NO	59,1	2,5
41 Statoil ASA Veslefrikk og Huldrafeltet	172 000	172 000	0	Offshore oil and gas activities	1.(g)	NO	60,8	2,9
42 Statoil ASA Bragefeltet	221 000	221 000	0	Offshore oil and gas activities	1.(g)	NO	60,6	3,1
43 Norske Skog Skogn	165 000	3 900	161 100	Pulp and paper production	6.(b).	NO	63,63	11,2
44 Statoil ASA Njordfeltet	170 000	170 000	0	Offshore oil and gas activities	1.(g)	NO	64,3	7,2
45 Statoil ASA Kristinfeltet	209 000	209 000	0	Offshore oil and gas activities	1.(g)	NO	65	6,4
46 Fesil Rana Metall AS	198 000	185 000	13 000	Iron and steel production	2.(b)	NO	66,31	14,16
47 Elkem Bjølvefossen	0			Iron and steel production	2.(d)	NO	60,43	6,43
48 ExxonMobil Exploration and Production Norway AS Jotunfeltet	166 000	166 000	0	Offshore oil and gas activities	1.(g)	NO	59,5	2,4
49 A/S Norske Shell Draugenfeltet	177 000	177 000	0	Offshore oil and gas activities	1.(g)	NO	64,4	7,8
50 Alcoa Norway ANS, Lista	163 000	163 000	0	Non-ferrous metal production	2.(e)	NO	58,05	6,47
51 Statoil ASA Volvefeltet	146 000	146 000	0	Offshore oil and gas activities	1.(g)	NO	58,4	1,9
52 Statoil ASA Heimdalfeltet	175 000	175 000	0	Offshore oil and gas activities	1.(g)	NO	59,6	2,2
53 NORSKE SKOGINDUSTRIER ASA, Saugbrugs	137 000	5 480	131 520	Pulp and paper production	6.(b).	NO	59,73	11,28
54 Bp Norge AS Ulafeltet	172 000	172 000	0	Offshore oil and gas activities	1.(g)	NO	57,1	2,8
55 Haraldrud energigjenvinningsanlegg	125 000	50 200	74 800	Waste and waste water management	5.(b)	NO	59,56	10,45
56 Klemetsrud energigjenvinningsanlegg	170 000	68 500	101 500	Waste and waste water management	5.(b)	NO	59,84	10,83
57 Norske Skogindustrier ASA, Follum Fabrikker	0			Pulp and paper production	6.(b).	NO	59,53	10,36
58 FREVAR KF - Forbrenningsanlegget (Fredrikstad)	107 000	794	106 206	Waste and waste water management	5.(b)	NO	59,12	10,57
59 Hydro Aluminium AS Årdal, Årdal Karbon	116 000	116 000	0	Other	1.(d)	NO	62,04	5,29
60 Hydro Aluminium AS Høyanger	100 000	100 000	0	Non-ferrous metal production	2.(e)	NO	61,21	6,05
61 INEOS Norge AS	0			Production of chemicals	4.(a)	NO	59,03	9,41

## SWEDEN

No	Facility	Total CO2 (t/a)	Fossil CO2	Bio CO2	Sector	Activity	Country	LAT	LONG
1	SSAB Oxelösund AB	2 170 000	2 170 000	0	Iron and steel production	2.(b)	SE	58,68	17,13
2	Luleå kraftvärmeverk LUKAB	1 980 000	1 980 000	0	Power & heat production	1.(c)	SE	65,57	22,21
3	M-real Sverige AB, Husums fabrik	1 690 000	70 000	1 620 000	Pulp and paper production	6.(a)	SE	63,34	19,16
4	Södra Cell Mönsterås	2 010 000	70 000	1 940 000	Pulp and paper production	6.(a)	SE	57,09	16,55
5	Preemraff, Lysekil	1 670 000	1 670 000	0	Oil and gas refineries	1.(a)	SE	58,35	11,42
6	Gruvöns bruk	1 560 000	56 000	1 504 000	Pulp and paper production	6.(a)	SE	59,34	13,12
7	Stora Enso, Skutskärs bruk	1 580 000	30 000	1 550 000	Pulp and paper production	6.(a)	SE	60,64	17,39
8	Korsnäsverken	1 330 000	10 000	1 320 000	Pulp and paper production	6.(a)	SE	60,68	17,27
9	Östrands massafabrik	1 400 000	80 000	1 320 000	Pulp and paper production	6.(a)	SE	62,48	17,29
10	Cementa AB, Slitefabriken	1 430 000	1 390 000	40 000	Cement and lime production	3.(c)	SE	57,71	18,80
11	SSAB Tunnpå AB	1 440 000	1 440 000	0	Iron and steel production	2.(b)	SE	65,56	22,20
12	Smurfit Kappa Kraftliner Piteå	1 230 000	20 000	1 210 000	Pulp and paper production	6.(a)	SE	65,33	21,44
13	Södra Cell Mörrum	1 070 000	70 000	1 000 000	Pulp and paper production	6.(a)	SE	56,16	14,76
14	Billerud Skärblacka AB	950 000	30 000	920 000	Pulp and paper production	6.(a)	SE	58,58	15,90
15	Södra Cell Värö	1 070 000	20 000	1 050 000	Pulp and paper production	6.(a)	SE	57,23	12,19
16	Västerås kraftvärmeverk	1 070 000	614 000	456 000	Power & heat production	1.(c)	SE	59,59	16,51
17	Skoghalls Bruk	1 010 000	90 000	920 000	Pulp and paper production	6.(b)	SE	59,32	13,44
18	Billerud Karlsborgs AB	760 000	10 000	750 000	Pulp and paper production	6.(a)	SE	65,80	23,29
19	VÄRTAVERKET	779 000	630 000	149 000	Power & heat production	1.(c)	SE	59,35	18,10
20	Iggesund Paperboard AB, Iggesund Bruk	830 000	60 000	770 000	Pulp and paper production	6.(a)	SE	61,64	17,08
21	STORA ENSO NYMÖLLA AB	780 000	0	780 000	Pulp and paper production	6.(a)	SE	56,04	14,48
22	Borealis Krackeranl.	690 000	690 000	0	Production of chemicals	4.(a)	SE	58,08	11,83
23	SCA Munksund	660 000	30 000	630 000	Pulp and paper production	6.(b)	SE	65,28	21,52
24	Korsnäs Frövi AB	660 000	20 000	640 000	Pulp and paper production	6.(a)	SE	59,48	15,33
25	Händelöverket	620 000	123 000	497 000	Waste treatment or incineration	5.(b)	SE	58,62	16,23
26	Mondi Dynäs AB	578 000	17 600	560 400	Pulp and paper production	6.(a)	SE	62,97	17,72
27	Domsjö Fabriker AB	577 000	16 000	561 000	Pulp and paper production	6.(a)	SE	63,27	18,70
28	Boländeranläggningarna, Avfallsförbränningsanläggning	571 000	256 000	315 000	Power & heat production	1.(c)	SE	59,85	17,68
29	Vallviks Bruk	540 000	10 000	530 000	Pulp and paper production	6.(a)	SE	61,18	17,17
30	Bäckhammars Bruk	410 000	20 000	390 000	Pulp and paper production	6.(a)	SE	59,31	14,11
31	STORA ENSO KVARNSVEDEN AB	340 000	30 000	310 000	Pulp and paper production	6.(b)	SE	60,48	15,42
32	Preem Petroleum AB Preemraff Göteborg	560 000	560 000	0	Oil and gas refineries	1.(a)	SE	57,71	11,83
33	E.ON Värme Sverige AB, Åbyverket	474 000	111 000	363 000	Power & heat production	1.(c)	SE	59,27	15,18
34	Sävenäs	550 000	140 000	410 000	Waste treatment or incineration	5.(b)	SE	57,73	12,05
35	Cementa AB Skövdefabriken	467 000	461 000	6 000	Cement and lime production	3.(c)	SE	58,38	13,82
36	Shell Raffinaderi AB	350 000	350 000	0	Oil and gas refineries	1.(a)	SE	57,70	11,88
37	SCA Packaging Obbola AB	460 000	40 000	420 000	Pulp and paper production	6.(b)	SE	63,73	20,23
38	Munksjö Aspa Bruk AB	480 000	20 000	460 000	Pulp and paper production	6.(a)	SE	58,76	14,80
39	Rya Gaskraftvärmeverk	500 000	500 000	0	Power & heat production	1.(c)	SE	57,69	11,89

40	Sysavs avfallsförbränningsanläggning	386 000	116 000	270 000	Waste treatment or incineration	5.(b)	SE	55,63	13,04
41	Avfallskraftvärmeverket Torsvik	190 000	50 000	140 000	Waste treatment or incineration	5.(b)	SE	57,70	14,15
42	SSAB Tunnpå i Borlänge	300 000	300 000	0	Iron and steel production	2.(c)	SE	60,49	15,45
43	HÅSSELBYVERKET	351 000	4 000	347 000	Pow er & heat production	1.(c)	SE	59,36	17,82
44	Kraftvärmeverket & Hetvattencentralen Vattumannen	480 000	30 000	450 000	Pow er & heat production	1.(c)	SE	59,38	16,49
45	Västhamsverket, (VHV)	470 000	70 000	400 000	Pow er & heat production	1.(c)	SE	56,03	12,69
46	Gärstadverket	350 000	60 000	290 000	Waste treatment or incineration	5.(b)	SE	58,44	15,66
47	Ryaverket	400 000	80 000	320 000	Pow er & heat production	1.(c)	SE	57,73	12,93
48	BRISTAVERKET	360 000	0	360 000	Pow er & heat production	1.(c)	SE	59,61	17,86
49	Ortvikens pappersbruk	290 000	40 000	250 000	Pulp and paper production	6.(b)	SE	62,37	17,33
50	LKAB - Kirunagruvan	430 000	430 000	0	Iron and steel production	2.(a)	SE	67,84	20,17
51	Lugnviksverket	250 000	20 000	230 000	Pow er & heat production	1.(c)	SE	63,21	14,65
52	Karskärsverket	330 000	170 000	160 000	Pow er & heat production	1.(c)	SE	60,68	17,27
53	Sandviksverket	380 000	60 000	320 000	Pow er & heat production	1.(c)	SE	56,87	14,84
54	CEMENTA, Degerhamn	248 000	247 000	1 000	Cement and lime production	3.(c)	SE	56,35	16,41
55	Kraftvärmeverket i Linköping	320 000	160 000	160 000	Pow er & heat production	1.(c)	SE	58,42	15,63
56	Bravikens Pappersbruk	190 000	50 000	140 000	Pulp and paper production	6.(b)	SE	58,58	16,17
57	Höganäs AB	220 000	220 000	0	Iron and steel production	2.(b)	SE	56,21	12,55
58	HALLSTA PAPPERSBRUK	190 000	20 000	170 000	Pulp and paper production	6.(a)	SE	60,24	18,57
59	Nordkalk / Köping	220 000	220 000	0	Cement and lime production	3.(c)	SE	59,50	16,03
60	Vargön Alloys AB	110 000	110 000	0	Non-ferrous metal production	2.(e)	SE	58,36	12,38
61	Idbäckens Kraftvärmeverk	227 000	1 000	226 000	Pow er & heat production	1.(c)	SE	58,74	17,00
62	IGELSTAVERKET	430 000	180 000	250 000	Pow er & heat production	1.(c)	SE	59,18	17,67
63	RÖNNSKÄRSVERKEN	170 000	170 000	0	Non-ferrous metal production	2.(e)	SE	64,67	21,27
64	Pilkington Floatglas AB	160 000	160 000	0	Other	3.(e)	SE	56,64	12,94
65	STORA ENSO FORS AB	244 000	2 000	242 000	Pulp and paper production	6.(a)	SE	60,21	16,32
66	Kalkproduktion Storugns AB	170 000	170 000	0	Cement and lime production	3.(c)	SE	57,84	18,81
67	KVV-Åkerslund	218 000	10 000	208 000	Pow er & heat production	1.(c)	SE	56,25	12,90
68	DÅVA KRAFTVÄRMEVERK	500 000	6 000	494 000	Waste treatment or incineration	5.(b)	SE	63,87	20,41
69	Heleneholmsverket, (HV/K)	130 000	130 000	0	Pow er & heat production	1.(c)	SE	55,58	13,01
70	Kubikenborg Aluminium AB	150 000	150 000	0	Non-ferrous metal production	2.(e)	SE	62,38	17,36
71	Karlskoga kraftvärmeverk	140 000	40 000	100 000	Pow er & heat production	1.(c)	SE	59,34	14,54
72	HPC Simpan och Ena Kraft, kraftvärmeverket	149 000	2 000	147 000	Pow er & heat production	1.(c)	SE	59,63	17,08
73	SAKAB AB	150 000	50 000	100 000	Waste treatment or incineration	5.(a)	SE	59,12	15,28
74	Munksjö Paper AB Billingsfors	180 000	20 000	160 000	Pulp and paper production	6.(a)	SE	58,99	12,26
75	Nynäshamns Raffinaderiet	160 000	160 000	0	Production of chemicals	4.(a)	SE	58,92	17,96
76	Perstorp Specialty Chemicals AB, Ångcentralen	160 000	70 000	90 000	Pow er & heat production	1.(c)	SE	56,12	13,38
77	LKAB - Malmbergsgruvan	140 000	140 000	0	Non-ferrous metal production	3.(a)	SE	67,20	20,71
78	SOLNAVERKET	180 000	20 000	160 000	Pow er & heat production	1.(c)	SE	59,35	17,97
79	Heden kraftvärmeverk	160 000	0	160 000	Pow er & heat production	1.(c)	SE	59,39	13,57
80	AB Sandvik Materials Technology	140 000	140 000	0	Iron and steel production	2.(b)	SE	60,62	16,79
81	ÅLIDHEMSANLÄGGNINGEN	120 000	10 000	110 000	Pow er & heat production	1.(c)	SE	63,81	20,32
82	SMA Svenska Mineral AB, RÄTTVIKS KALKVERK	92 000	92 000	0	Cement and lime production	3.(c)	SE	60,90	15,17

83 HAMMARBYVERKET	130 000	0	130 000	Power & heat production	1.(c)	SE	59,30	18,09
84 Perstorp Oxo AB, Stenungsund	110 000	110 000	0	Production of chemicals	4.(a)	SE	58,10	11,86
85 Sävenäs Kraftvärmeverk	150 000	20 000	130 000	Power & heat production	1.(c)	SE	57,73	12,03
86 OVAKO Steel AB	80 000	80 000	0	Iron and steel production	2.(b)	SE	60,55	16,30
87 Allöverket	201 000	1 000	200 000	Power & heat production	1.(c)	SE	56,04	14,15
88 Nordkalk AB Luleå	100 000	100 000	0	Cement and lime production	3.(c)	SE	65,56	22,20

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