

Supplementary materials

Table S1: Steel production by each pathway included in FTT:Steel. In Mtcs/y.

	China															
	S0				S1				S2				S3			
	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF - BOF	902.6	929.2	832.1	756.8	907.3	914.3	702.1	509.6	907.2	876.3	595.5	343.5	906.3	758.9	293.6	22.9
BF - BOF (BB)	0.5	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.3	0.3
BF - BOF (CCS)	1.1	0.7	0.3	0.2	0.1	7.1	25.2	50.0	0.1	11.6	44.5	98.6	0.3	41.3	112.9	158.8
BF - BOF (CCS, BB)	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.3	0.5
BF TGR - BOF (CCS)	0.8	1.6	0.9	0.5	0.0	0.1	0.2	0.3	0.0	0.3	0.5	1.1	0.2	1.1	1.7	2.4
BF TGR - BOF (CCS, BB)	0.3	0.5	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.3	0.1	0.4	0.6	1.1
DR-gas - EAF	0.3	0.2	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.3	0.2	0.1	0.0
DR-gas - EAF (BB)	0.3	0.9	0.9	1.1	0.0	0.1	0.1	0.2	0.0	0.1	0.2	0.5	0.1	0.4	0.8	1.5
DR-gas - EAF (CCS)	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.2	0.2
DR-gas - EAF (CCS, BB)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.2
DR-coal - EAF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (BB)	0.3	0.5	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.1	0.3	0.5	0.6
DR-coal - EAF (CCS)	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.2	0.3	0.3
DR-coal - EAF (CCS, BB)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4
SR - BOF	6.0	11.8	23.3	46.9	6.1	10.9	14.7	16.6	6.1	7.1	5.2	3.2	6.1	6.8	3.8	1.6
SR - BOF (BB)	0.3	1.0	1.1	1.5	0.0	0.1	0.1	0.2	0.0	0.1	0.2	0.6	0.1	0.4	0.8	1.9
SR - BOF (CCS)	0.2	0.6	0.7	0.9	0.0	0.0	0.1	0.2	0.0	0.1	0.2	0.4	0.0	0.3	0.6	1.3
SR - BOF (CCS, BB)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.3	1.1
SR + - BOF	0.8	4.0	6.7	11.4	0.0	0.2	0.2	0.2	0.0	0.1	0.1	0.0	0.2	0.6	0.2	0.1
SR + - BOF (BB)	0.3	0.8	0.7	0.8	0.0	0.1	0.1	0.2	0.0	0.1	0.2	0.4	0.1	0.4	0.7	1.4
SR + - BOF (CCS)	0.0	0.5	0.4	0.3	0.0	8.7	34.2	73.9	0.0	12.9	52.1	130.4	0.0	48.0	142.6	253.3
SR + - BOF (CCS, BB)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.7
DR-H2 - EAF	0.0	3.7	1.5	0.5	0.0	10.4	49.0	137.1	0.0	15.6	72.8	156.9	0.0	70.4	223.0	264.1
Electrolysis	0.0	0.0	1.4	0.4	0.0	0.0	1.1	11.6	0.0	0.0	1.8	22.2	0.0	0.0	6.5	54.2
Scrap - EAF	94.8	140.6	214.9	252.6	95.3	171.9	265.4	281.1	95.3	199.8	319.1	322.9	95.2	198.6	312.3	317.7
Total	1009.3	1098.0	1086.3	1074.9	1009.3	1124.3	1093.1	1082.4	1009.3	1124.7	1093.4	1082.3	1009.3	1129.3	1102.6	1086.4

	Japan															
	S0				S1				S2				S3			
	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF - BOF	63.8	49.2	40.0	35.9	64.3	50.1	37.5	28.4	64.3	46.8	29.2	16.4	64.3	42.1	16.9	3.4
BF - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF - BOF (CCS)	0.1	0.1	0.0	0.0	0.0	0.4	1.5	2.7	0.0	0.7	2.6	5.3	0.0	1.9	5.7	7.7
BF - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF TGR - BOF (CCS)	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
BF TGR - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF	0.1	0.3	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (BB)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (CCS)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF	0.1	0.3	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (BB)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (CCS)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR - BOF	2.3	2.9	3.9	5.6	2.3	3.0	3.7	4.2	2.3	2.0	1.4	0.9	2.3	2.0	1.2	0.5
SR - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR - BOF (CCS)	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR + - BOF	0.1	0.2	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR + - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR + - BOF (CCS)	0.0	0.0	0.1	0.1	0.0	0.5	1.7	3.1	0.0	0.7	2.7	6.0	0.0	2.1	6.7	10.7
SR + - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-H2 - EAF	0.0	0.9	1.0	0.9	0.0	0.6	2.4	5.5	0.0	0.9	3.9	9.3	0.0	3.1	11.0	17.7
Electrolysis	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.7	0.0	0.0	0.1	1.4	0.0	0.0	0.2	1.5
Scrap - EAF	23.0	34.3	40.2	41.7	23.1	35.1	40.3	41.5	23.1	38.5	47.1	46.9	23.1	38.4	45.4	44.4
Total	89.8	88.8	86.9	86.2	89.8	89.9	87.2	86.3	89.8	89.7	87.1	86.2	89.8	89.9	87.3	86.2
	Korea															
	S0				S1				S2				S3			
	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

BF - BOF	39.8	41.0	37.0	31.8	40.1	33.5	21.2	10.7	40.1	29.7	14.0	4.4	40.1	28.1	11.2	2.2
BF - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF - BOF (CCS)	0.1	0.1	0.0	0.0	0.0	0.8	2.9	5.6	0.0	0.8	3.7	8.1	0.0	1.0	4.3	8.2
BF - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF TGR - BOF (CCS)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1
BF TGR - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (CCS)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-gas - EAF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (CCS)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-coal - EAF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR - BOF	1.3	2.1	3.2	4.6	1.3	1.6	1.3	0.8	1.3	1.2	0.7	0.3	1.3	1.1	0.6	0.2
SR - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR - BOF (CCS)	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
SR - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR + - BOF	2.4	2.6	2.5	2.3	2.4	2.2	1.3	0.7	2.4	1.6	0.7	0.2	2.4	1.6	0.6	0.2
SR + - BOF (BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SR + - BOF (CCS)	0.0	0.0	0.0	0.0	0.0	0.9	3.6	7.3	0.0	1.0	4.4	10.2	0.0	1.3	5.5	10.9
SR + - BOF (CCS, BB)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DR-H2 - EAF	0.0	0.1	0.0	0.0	0.0	0.9	3.4	5.7	0.0	1.1	4.2	4.8	0.0	1.7	6.3	6.8
Electrolysis	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.9	0.0	0.0	0.1	1.1	0.0	0.0	0.1	1.0
Scrap - EAF	21.6	23.1	26.2	27.7	21.6	30.3	35.7	35.2	21.6	34.7	41.7	37.7	21.6	35.4	40.8	37.2
Total	65.5	69.7	69.6	67.0	65.6	70.2	69.6	67.0	65.6	70.1	69.5	66.9	65.6	70.2	69.6	66.9

Table S2: Employment by technology in thousand FTE.

	China															
	S0				S1				S2				S3			
	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF - BOF	1161	1195.2	1070.4	973.41	1167.1	1176.1	903.05	655.52	1167	1127.2	766.03	441.81	1165.7	976.19	377.66	29.404
BF - BOF (BB)	0.6044	0.5017	0.3596	0.278	0.0273	0.028	0.0306	0.0337	0.0364	0.0675	0.1367	0.2843	0.1515	0.271	0.3493	0.3426
BF - BOF (CCS)	1.4973	0.903	0.4505	0.2476	0.0676	9.5294	34.071	67.489	0.0901	15.72	60.077	133.19	0.3754	55.785	152.48	214.44
BF - BOF (CCS, BB)	0.5912	0.3235	0.1453	0.0739	0.0267	0.0279	0.0472	0.0851	0.0356	0.06	0.1154	0.2069	0.1482	0.2535	0.4187	0.7337
BF TGR - BOF (CCS)	1.0805	2.2228	1.2118	0.7248	0.0487	0.1789	0.288	0.4597	0.0649	0.3705	0.7518	1.484	0.2704	1.5303	2.3585	3.31
BF TGR - BOF (CCS, BB)	0.3616	0.6801	0.3311	0.1822	0.0163	0.0584	0.1028	0.1896	0.0217	0.1196	0.2335	0.436	0.0905	0.5014	0.8549	1.5679
DR-gas - EAF	0.4174	0.2999	0.1727	0.1312	0.4204	0.4148	0.4324	0.4772	0.4204	0.3385	0.191	0.0881	0.4199	0.3349	0.14	0.039
DR-gas - EAF (BB)	0.4393	1.4591	1.5144	1.8242	0.0198	0.0948	0.1752	0.3238	0.0264	0.1624	0.3446	0.7938	0.11	0.6769	1.2349	2.4484
DR-gas - EAF (CCS)	0.2919	0.3922	0.1122	0.0391	0.0132	0.0296	0.0275	0.0304	0.0175	0.0926	0.1611	0.2352	0.0731	0.3733	0.4219	0.3434
DR-gas - EAF (CCS, BB)	0.0987	0.1605	0.0624	0.0292	0.0045	0.0162	0.0276	0.051	0.0059	0.0325	0.0591	0.0987	0.0247	0.1381	0.2271	0.39
DR-coal - EAF	0.0111	0.013	0.0126	0.0131	0.0112	0.0118	0.0073	0.004	0.0112	0.0102	0.0058	0.0027	0.0111	0.0097	0.004	0.0011
DR-coal - EAF (BB)	0.3206	0.6238	0.3057	0.2335	0.0144	0.0454	0.0601	0.0897	0.0193	0.1032	0.1886	0.3475	0.0802	0.4247	0.5731	0.786
DR-coal - EAF (CCS)	0.2209	0.3518	0.1282	0.0545	0.01	0.029	0.0345	0.0428	0.0133	0.0716	0.1306	0.2139	0.0553	0.292	0.359	0.3425
DR-coal - EAF (CCS, BB)	0.0732	0.0928	0.0254	0.0094	0.0033	0.0094	0.0176	0.0454	0.0044	0.0219	0.0371	0.0538	0.0183	0.0933	0.1733	0.4498
SR - BOF	10.535	20.519	40.631	81.877	10.599	19.031	25.631	29.033	10.598	12.338	8.9919	5.5843	10.588	11.85	6.7056	2.7195
SR - BOF (BB)	0.4733	1.6719	1.954	2.68	0.0213	0.1061	0.2118	0.4322	0.0284	0.1761	0.3944	0.9863	0.1185	0.7382	1.4706	3.3597
SR - BOF (CCS)	0.3299	1.1394	1.2766	1.5794	0.0149	0.0818	0.1739	0.3624	0.0198	0.1306	0.3134	0.7975	0.0826	0.5426	1.1095	2.31
SR - BOF (CCS, BB)	0.1077	0.2434	0.1626	0.1383	0.0049	0.0256	0.0725	0.253	0.0065	0.0377	0.0787	0.1692	0.027	0.1736	0.5173	2.0074
SR + - BOF	1.3529	6.5639	10.946	18.729	0.061	0.2863	0.3663	0.3904	0.0813	0.2261	0.1276	0.059	0.3387	0.9061	0.3782	0.106
SR + - BOF (BB)	0.4385	1.2949	1.1712	1.2773	0.0198	0.0892	0.1606	0.2924	0.0264	0.1541	0.3137	0.7014	0.1098	0.6466	1.137	2.2819
SR + - BOF (CCS)	0	0.8162	0.6069	0.5106	0	15.007	58.716	127.08	0	22.188	89.561	224.08	0	82.565	245.09	435.29
SR + - BOF (CCS, BB)	0	0.1832	0.0789	0.0439	0	0.02	0.0471	0.139	0	0.0332	0.0612	0.1102	0	0.1455	0.3489	1.1266
DR-H2 - EAF	0	4.5177	1.857	0.6519	0	12.703	59.838	167.27	0	18.971	88.824	191.39	0	85.901	272.11	322.19
Electrolysis	0	0	2.0857	0.5665	0	0	1.6825	17.436	0	0	2.7028	33.309	0	0	9.7148	81.233
Scrap - EAF	113.97	169.05	258.46	303.84	114.67	206.73	319.16	338.13	114.66	240.28	383.83	388.31	114.55	238.81	375.58	382.07
Total	1294.2	1409.2	1394.4	1389.1	1293.1	1440.6	1404.4	1405.7	1293.1	1438.9	1403.7	1424.7	1293.4	1459.2	1451.4	1489.3
Japan																
	S0				S1				S2				S3			

	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF - BOF	77.643	59.85	48.7	43.712	78.313	61.035	45.637	34.618	78.303	56.935	35.513	19.928	78.232	51.304	20.548	4.1247
BF - BOF (BB)	0.0478	0.0242	0.013	0.0081	0.0017	0.001	0.0007	0.0005	0.0024	0.0027	0.0045	0.0069	0.0072	0.0079	0.0098	0.0085
BF - BOF (CCS)	0.1293	0.0814	0.0579	0.046	0.0046	0.569	1.8922	3.5077	0.0065	0.8802	3.2869	6.7714	0.0195	2.389	7.242	9.8816
BF - BOF (CCS, BB)	0.0495	0.0238	0.0125	0.0076	0.0017	0.0013	0.0016	0.0021	0.0025	0.0028	0.0046	0.0071	0.0075	0.0083	0.011	0.0115
BF TGR - BOF (CCS)	0.0917	0.2159	0.1856	0.175	0.0032	0.0112	0.016	0.0225	0.0046	0.0182	0.0319	0.0553	0.0138	0.0549	0.077	0.0894
BF TGR - BOF (CCS, BB)	0.0303	0.0537	0.0326	0.0226	0.0011	0.003	0.0041	0.0056	0.0015	0.0057	0.0096	0.0152	0.0046	0.0171	0.0234	0.0267
DR-gas - EAF	0.101	0.3578	0.4741	0.6634	0.0035	0.0137	0.0187	0.0252	0.0051	0.0107	0.0055	0.0026	0.0152	0.0316	0.0135	0.0044
DR-gas - EAF (BB)	0.0331	0.0864	0.0815	0.0818	0.0012	0.0039	0.0049	0.006	0.0017	0.0061	0.0095	0.015	0.005	0.0184	0.0236	0.027
DR-gas - EAF (CCS)	0.0232	0.0637	0.0637	0.0673	0.0008	0.003	0.004	0.0053	0.0012	0.0045	0.0072	0.0119	0.0035	0.0134	0.0182	0.0219
DR-gas - EAF (CCS, BB)	0.0075	0.0134	0.0082	0.0055	0.0003	0.0008	0.001	0.0012	0.0004	0.0013	0.002	0.0028	0.0011	0.0041	0.0049	0.0049
DR-coal - EAF	0.0761	0.2907	0.4148	0.6264	0.0027	0.0104	0.0139	0.0177	0.0038	0.0081	0.0042	0.002	0.0114	0.0239	0.0102	0.0034
DR-coal - EAF (BB)	0.0248	0.065	0.0614	0.0614	0.0009	0.0029	0.0037	0.0045	0.0012	0.0046	0.0071	0.0112	0.0037	0.0137	0.0176	0.0201
DR-coal - EAF (CCS)	0.0175	0.0542	0.0617	0.0739	0.0006	0.0023	0.0032	0.0043	0.0009	0.0034	0.0056	0.0098	0.0026	0.0102	0.0144	0.0189
DR-coal - EAF (CCS, BB)	0.0056	0.0097	0.0058	0.0038	0.0002	0.0006	0.0008	0.001	0.0003	0.001	0.0015	0.0021	0.0008	0.003	0.004	0.0049
SR - BOF	3.7689	4.7057	6.353	9.0908	3.8061	4.8617	5.9458	6.8012	3.8057	3.2811	2.251	1.4267	3.8024	3.2222	1.8839	0.8868
SR - BOF (BB)	0.0377	0.0633	0.0352	0.0225	0.0013	0.0029	0.0029	0.0032	0.0019	0.0069	0.0116	0.018	0.0057	0.0205	0.0263	0.0251
SR - BOF (CCS)	0.0274	0.0927	0.1207	0.1668	0.001	0.0039	0.0061	0.0094	0.0014	0.0058	0.0107	0.0211	0.0041	0.0173	0.0275	0.0411
SR - BOF (CCS, BB)	0.0088	0.0143	0.0079	0.005	0.0003	0.0009	0.0013	0.0019	0.0004	0.0016	0.0027	0.0042	0.0013	0.0049	0.0073	0.0108
SR + - BOF	0.1112	0.3701	0.4379	0.5468	0.0039	0.0135	0.0153	0.016	0.0056	0.0117	0.006	0.0028	0.0167	0.0344	0.0147	0.0048
SR + - BOF (BB)	0.0351	0.0501	0.0225	0.0116	0.0012	0.0025	0.0023	0.0023	0.0018	0.0058	0.0085	0.0112	0.0053	0.0174	0.0188	0.0147
SR + - BOF (CCS)	0	0.0793	0.0893	0.1063	0	0.8268	2.7241	4.9936	0	1.1894	4.3886	9.6324	0	3.4133	10.717	17.131
SR + - BOF (CCS, BB)	0	0.0126	0.0055	0.0027	0	0.0008	0.001	0.0013	0	0.0015	0.0022	0.0028	0	0.0044	0.0056	0.0068
DR-H2 - EAF	0	1.0664	1.1487	1.0574	0	0.7327	2.8845	6.5436	0	1.0539	4.6424	11.026	0	3.7391	13.118	21.088
Electrolysis	0	0	0.1884	0.077	0	0	0.0996	0.9969	0	0	0.1749	2.0967	0	0	0.286	2.283
Scrap - EAF	27.685	41.283	48.35	50.168	27.742	42.242	48.417	49.966	27.741	46.297	56.703	56.357	27.735	46.177	54.625	53.385
Total	109.95	108.93	106.93	106.81	109.89	110.35	107.7	107.56	109.89	109.74	107.09	107.44	109.9	110.55	108.75	109.12
	Korea															
	S0				S1				S2				S3			
	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050	2022	2030	2040	2050
BF - OHF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BF - BOF	48.459	49.887	44.987	38.753	48.867	40.801	25.779	13.054	48.867	36.177	17.067	5.3395	48.855	34.162	13.664	2.651
BF - BOF (BB)	0.0345	0.0225	0.0123	0.0067	0.0026	0.0019	0.0015	0.0011	0.0026	0.0033	0.0059	0.0093	0.0035	0.0042	0.0052	0.0043

BF - BOF (CCS)	0.0911	0.0651	0.0417	0.0269	0.0069	0.9721	3.6785	7.1192	0.0069	1.0791	4.6907	10.33	0.0092	1.3337	5.5274	10.532
BF - BOF (CCS, BB)	0.035	0.0195	0.0094	0.0046	0.0026	0.0026	0.005	0.0103	0.0026	0.0033	0.0057	0.0081	0.0035	0.0048	0.0106	0.0233
BF TGR - BOF (CCS)	0.0655	0.1484	0.0937	0.0599	0.0049	0.0183	0.0332	0.0559	0.0049	0.0232	0.0536	0.1093	0.0066	0.0311	0.0651	0.116
BF TGR - BOF (CCS, BB)	0.0218	0.0405	0.0197	0.0097	0.0016	0.0053	0.0102	0.0211	0.0016	0.0068	0.0121	0.0182	0.0022	0.0096	0.0215	0.0481
DR-gas - EAF	0.0701	0.1839	0.1491	0.1172	0.0053	0.0168	0.0168	0.0142	0.0053	0.0104	0.0043	0.0013	0.007	0.014	0.0055	0.0015
DR-gas - EAF (BB)	0.0227	0.0322	0.0106	0.0035	0.0017	0.0031	0.0018	0.001	0.0017	0.006	0.0067	0.0052	0.0023	0.008	0.0082	0.0055
DR-gas - EAF (CCS)	0.0159	0.0229	0.0077	0.0026	0.0012	0.0027	0.002	0.0013	0.0012	0.0045	0.0055	0.0043	0.0016	0.006	0.0067	0.0047
DR-gas - EAF (CCS, BB)	0.0053	0.0062	0.0015	0.0004	0.0004	0.0006	0.0003	0.0001	0.0004	0.0013	0.0013	0.0008	0.0005	0.0017	0.0016	0.001
DR-coal - EAF	0.0537	0.1852	0.212	0.2289	0.004	0.0131	0.0101	0.0062	0.004	0.0083	0.0035	0.001	0.0054	0.011	0.0043	0.0012
DR-coal - EAF (BB)	0.0174	0.032	0.016	0.0079	0.0013	0.0033	0.003	0.0025	0.0013	0.005	0.0067	0.0066	0.0017	0.0068	0.0083	0.0075
DR-coal - EAF (CCS)	0.012	0.0193	0.0078	0.0031	0.0009	0.0023	0.0019	0.0014	0.0009	0.0035	0.0046	0.004	0.0012	0.0047	0.0056	0.0042
DR-coal - EAF (CCS, BB)	0.004	0.005	0.0014	0.0004	0.0003	0.0006	0.0006	0.0006	0.0003	0.001	0.0011	0.0008	0.0004	0.0014	0.0018	0.0018
SR - BOF	2.1317	3.3623	5.1471	7.4458	2.1523	2.5453	2.0998	1.3736	2.1523	1.8957	1.0828	0.4729	2.1519	1.8211	0.9865	0.3976
SR- BOF (BB)	0.0272	0.0551	0.03	0.0165	0.002	0.0056	0.0066	0.0075	0.002	0.0084	0.0138	0.0191	0.0027	0.0113	0.0174	0.0223
SR - BOF (CCS)	0.0197	0.0804	0.1185	0.1751	0.0015	0.0087	0.0239	0.0611	0.0015	0.0098	0.0332	0.1016	0.002	0.0129	0.0394	0.1039
SR - BOF (CCS, BB)	0.0063	0.0124	0.0069	0.004	0.0005	0.0021	0.0072	0.0301	0.0005	0.002	0.0036	0.0052	0.0006	0.0034	0.0131	0.0586
SR + - BOF	3.6851	3.9772	3.8878	3.5713	3.7208	3.2985	2.0352	1.0001	3.7208	2.5033	1.0376	0.315	3.7201	2.4265	0.9451	0.2614
SR + - BOF (BB)	0.0252	0.0381	0.0137	0.005	0.0019	0.004	0.0034	0.0028	0.0019	0.0067	0.0086	0.0085	0.0025	0.0091	0.0108	0.0099
SR + - BOF (CCS)	0	0.0534	0.0481	0.0431	0	1.4367	5.7105	11.661	0	1.5519	7.1166	16.35	0	2.0111	8.7606	17.479
SR + - BOF (CCS, BB)	0	0.0097	0.0034	0.0013	0	0.0015	0.0038	0.0117	0	0.0017	0.0023	0.0023	0	0.0027	0.0076	0.0245
DR-H2 - EAF	0	0.1189	0.049	0.015	0	1.124	4.0598	6.7297	0	1.278	4.9462	5.7074	0	1.9744	7.4891	8.0322
Electrolysis	0	0	0.1305	0.0303	0	0	0.153	1.3365	0	0	0.1858	1.6293	0	0	0.1818	1.4283
Scrap - EAF	25.963	27.828	31.471	33.284	26.014	36.472	42.948	42.341	26.014	41.689	50.126	45.353	26.013	42.524	49.097	44.773
Total	80.766	86.205	86.476	83.816	80.793	86.742	86.595	84.844	80.793	86.279	86.425	85.802	80.793	86.396	86.884	85.993

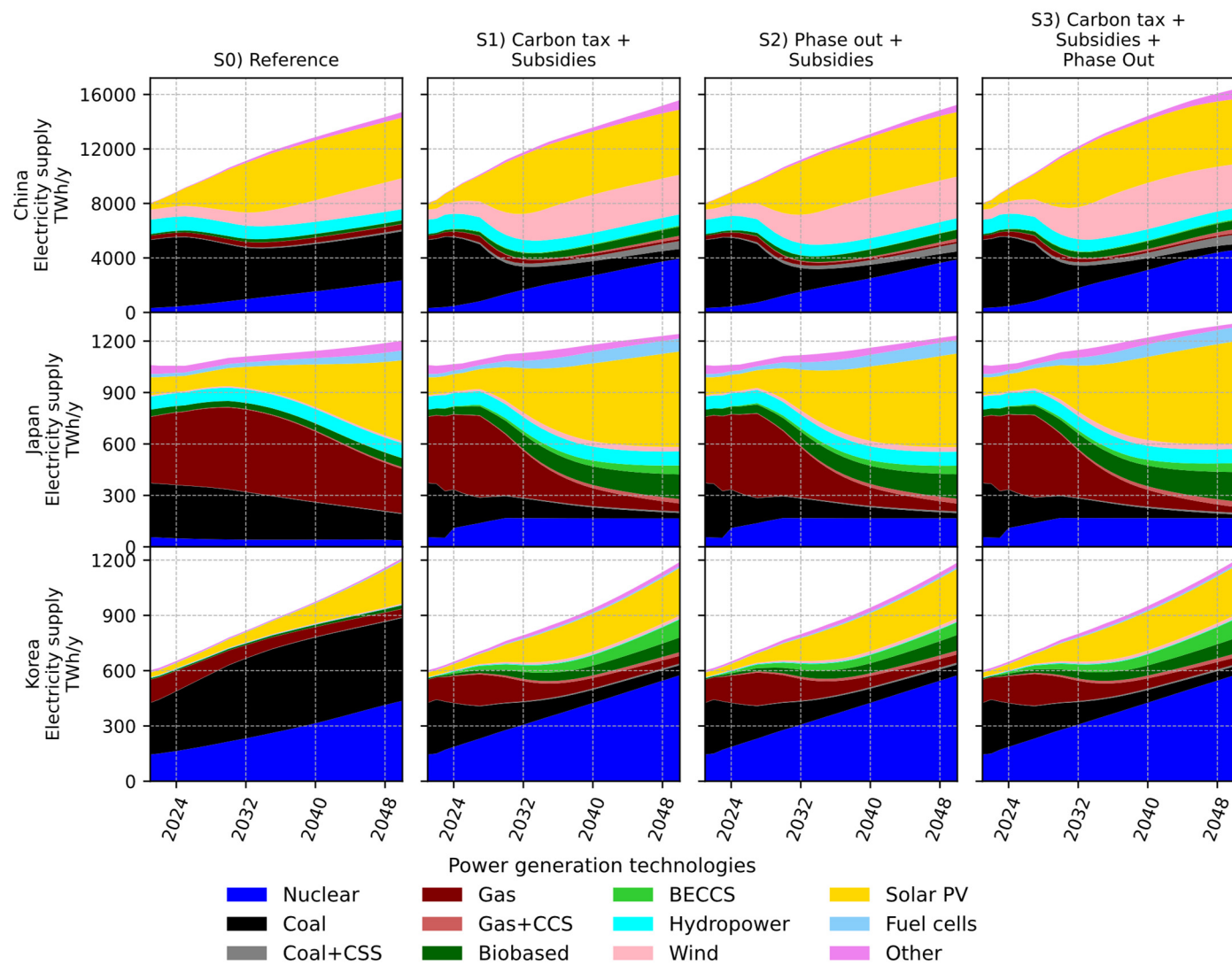


Figure S1: Technology diffusion in the power sector in each country and scenario.

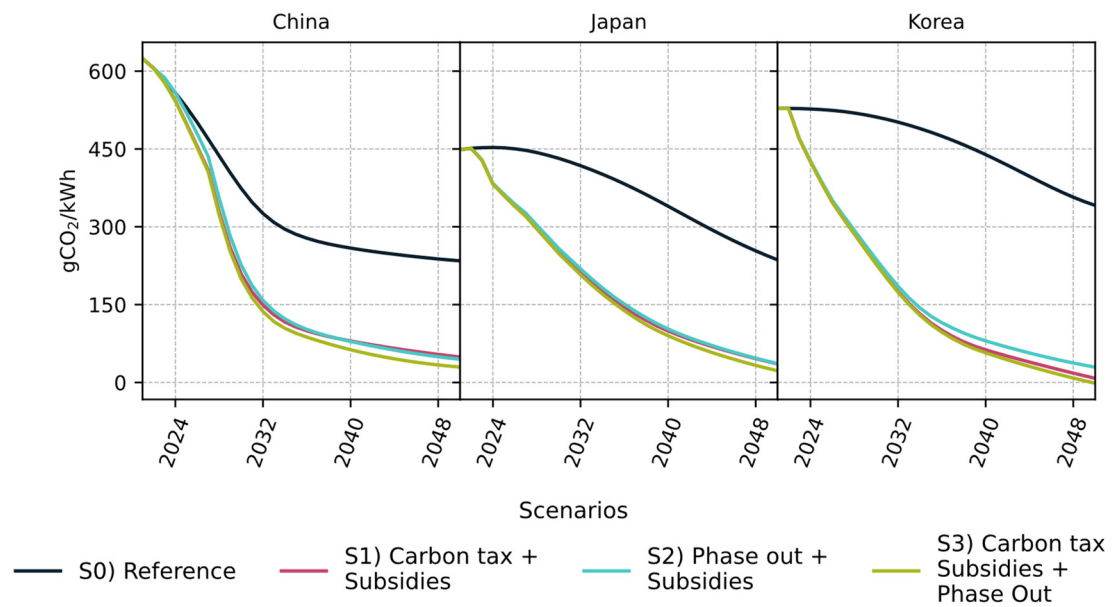


Figure S2: Power grid emission factors for each country and scenario.

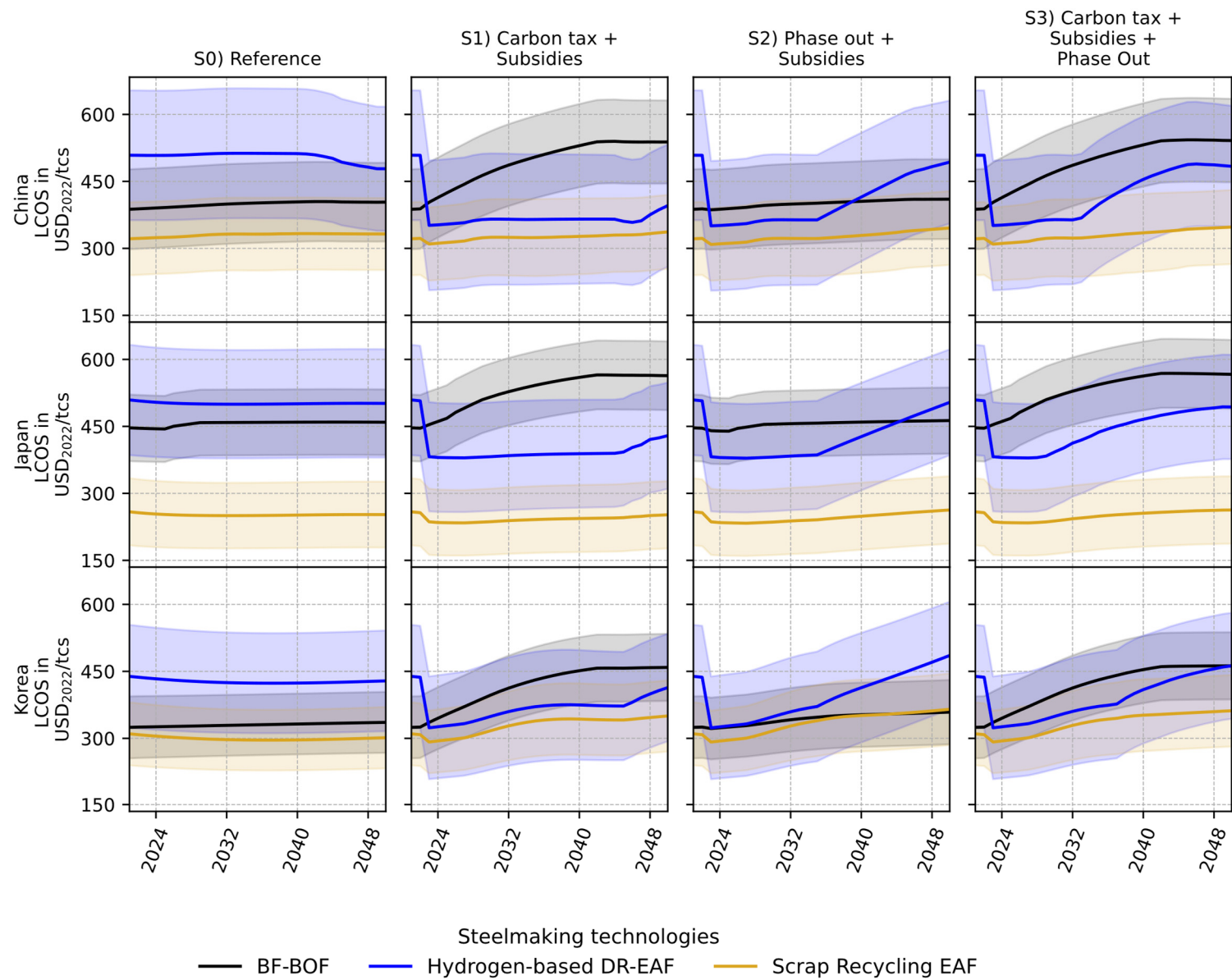


Figure S3: Levelised cost of crude steel (LCOS) for selected technologies in each country and scenario. Solid lines indicate mean values and shaded area indicates the confidence interval (2*standard deviation).