

Table S1 Fossil fuel types and emission factors used in this study.

No. (t)	Industry process	Category	NCV _i (PJ/10 ⁴ ton, 10 ⁸ m ³)	CC _i (ton CO ₂ /TJ)
1	Raw coal	Coal	0.21	96.51
2	Cleaned coal		0.26	96.51
3	Other washed coal		0.15	96.51
4	Briquettes		0.18	96.51
5	Coke		0.28	115.07
6	Coke oven gas	Oil	1.61	78.80
7	Other gas		0.83	78.80
8	Other coking products		0.28	100.64
9	Crude oil		0.43	73.63
10	Gasoline		0.44	69.30
11	Kerosene		0.44	71.87
12	Diesel oil		0.43	74.07
13	Fuel oil		0.43	77.37
14	Liquefied petroleum gas (LPG)		0.51	63.07
15	Refinery gas		0.47	73.33
16	Other petroleum products	Gas	0.43	74.07
17	Nature gas		3.89	56.17

Table S2 Industry processes involved in this study and related emission factors.

No. (t)	Industry process	EFt (ton/ton)	Allocation sectors
1	Ammonia production	1.5000	Raw Chemical Materials and Chemical Products
2	Soda Ash production	0.4150	Raw Chemical Materials and Chemical Products
3	Cement production	0.4985	Non-metal Mineral Products
4	Lime production	0.6830	Non-metal Mineral Products
5	Ferrochromium production	1.3000	Smelting and Pressing of Ferrous Metals
6	Silicon metal production	4.3000	Smelting and Pressing of Ferrous Metals
7	Ferro-unclassified production	4.0000	Smelting and Pressing of Ferrous Metals

Table S3 Sectoral categories of the NAQSIQ.

<i>No. (j)</i>	<i>Socioeconomic sectors</i>	<i>Category</i>
1	Farming, Forestry, Animal Husbandry, Fishery and Water Conservancy	Farming sector
2	Coal Mining and Dressing	Energy production
3	Petroleum and Natural Gas Extraction	Energy production
4	Ferrous Metals Mining and Dressing	Heavy manufacturing
5	Nonferrous Metals Mining and Dressing	Heavy manufacturing
6	Non-metal Minerals Mining and Dressing	Heavy manufacturing
7	Other Minerals Mining and Dressing	Heavy manufacturing
8	Food Processing	Light manufacturing
9	Food Production	Light manufacturing
10	Beverage Production	Light manufacturing
11	Tobacco Processing	Light manufacturing
12	Textile Industry	Light manufacturing
13	Garments and Other Fibre Products	Light manufacturing
14	Leather, Furs, Down and Related Products	Light manufacturing
15	Timber Processing, Bamboo, Cane, Palm Fibre & Straw Products	Light manufacturing
16	Furniture Manufacturing	Light manufacturing
17	Papermaking and Paper Products	Light manufacturing
18	Printing and Record Medium Reproduction	Light manufacturing
19	Cultural, Educational and Sports Articles	Light manufacturing
20	Petroleum Processing and Coking	Energy production
21	Raw Chemical Materials and Chemical Products	Heavy manufacturing
22	Medical and Pharmaceutical Products	Light manufacturing
23	Chemical Fibre	Heavy manufacturing
24	Rubber Products	Heavy manufacturing
25	Plastic Products	Heavy manufacturing
26	Non-metal Mineral Products	Heavy manufacturing
27	Smelting and Pressing of Ferrous Metals	Heavy manufacturing
28	Smelting and Pressing of Nonferrous Metals	Heavy manufacturing
29	Metal Products	Heavy manufacturing
30	Ordinary Machinery	Heavy manufacturing
31	Equipment for Special Purposes	Heavy manufacturing
32	Transportation Equipment manufacturing	Heavy manufacturing
33	Electric Equipment and Machinery	High-tech industry
34	Electronic and Telecommunications Equipment	High-tech industry
35	Instruments, Meters, Cultural and Office Machinery	High-tech industry
36	Other Manufacturing Industry	High-tech industry
37	Scrap and waste	High-tech industry
38	Production and Supply of Electric Power, Steam and Hot Water	Energy production
39	Production and Supply of Gas	Energy production
40	Production and Supply of Tap Water	Heavy manufacturing

41	Construction	Construction
42	Transportation, Storage, Post and Telecommunication Services	Services sectors
43	Wholesale, Retail Trade and Catering Services	
44	Other service sectors	
45	Urban	Residential usage
46	Rural	
47	Other	Other