

Briefing Note on Calculating Emission Reductions from Individual Daily Activities

To guide the public in practicing a low-carbon lifestyle, IPE has developed a Form for Calculating Emission Reductions from Individual Daily Activities (hereinafter referred to as the “Form”) based on extensive research and analysis.

- Calculation Method of Emission Reduction of Individual Low-Carbon Behavior:

$$E = E_B - E_R \quad (1)$$

where:

E - Emission reduction from individual low-carbon behavior

E_B - Baseline scenario emissions

E_R - Reduction scenario emissions

of which,

$$E_B = \sum AD_{B_i} * EF_{B_i} \quad (2)$$

where:

AD_B - Baseline scenario activity level

EF_B - Emission factor or product carbon footprint associated with the baseline scenario activity

i - Types of baseline scenario activity

$$E_R = \sum AD_{R_j} * EF_{R_j} \quad (3)$$

where:

AD_R - Activity level of the emission reduction scenario

EF_R - Emission factor or product carbon footprint associated with the emission reduction scenario activity

j - Types of activities involved in emission reduction scenario

IPE matches the relevant product carbon footprints or emission factors based on the activities or products involved in the baseline scenario and emission reduction scenario, and presents the calculation results in terms of emission reductions in kilograms of carbon dioxide equivalent (kgCO₂e) per person.

- Emission factor data: Sourced from the [Product Carbon Footprint Disclosure \(PCFD\) Platform](#), [China Products Carbon Footprint Factors Database \(CPCD\)](#), [China Enterprise GHG Emission Accounting](#)

Platform, the 2022 National Average Grid Emission Factor¹ released by the Ministry of Ecology and Environment, industry research reports, academic literature, and more.

- Activity level data and supplementary notes: Derived from the National Bureau of Statistics (<https://data.stats.gov.cn/index.htm>), academic literature, industry research reports, news articles, publicly disclosed data of mainstream brands and manufacturers, field research and other channels.

IPE will periodically update, optimize and upgrade the Form based on the latest research.

1 https://www.mee.gov.cn/xxgk2018/xxgk/xxgk06/202302/t20230207_1015569.html

Form for Calculating Emission Reductions from Individual Daily Activities:

	Emission Reduction Action	Calculation Period	Product Carbon Footprint and Emission Factors	Individual Low-Carbon Behavior Emission Reduction (Unit: kgCO ₂ e)
1	Bring your own bag when shopping	Annual, 52 weeks	Plastic film bag 3.24kgCO ₂ e/kg	2.02
2	Go to bed early when running out of shows to watch	Annual, 365 days	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	131.74
3	Turn off the faucet while brushing your teeth	Annual, 365 days	Winter residential water use (other washing water) 1.43 kgCO ₂ e/m ³ Summer residential water use (other washing water) 0.12 kgCO ₂ e/m ³	13.44
4	Bring your own cup when going out	Annual, 52 weeks	Disposable paper cups: a person drinks two cups of water per day, and each person uses 700 disposable paper cups per year, which are discarded directly after use 39.70kgCO ₂ e/person-year General plastic 3.12kgCO ₂ e/kg	14.20
5	Sort your garbage	Annual	/	52.95
6	Reduce unnecessary printing	Annual, 365 Days	Coated paper 953gCO ₂ e/kg	1.52
7	Buy and use fewer single-use plastic products	Annual, 52 weeks	Disposable polypropylene takeout container (capacity 650ml, 23g each) 0.19kgCO ₂ e/pc	29.64
8	Rationalize gift wrapping	Annual, 12 Months	Wrapping paper 141.56gCO ₂ e/kg	0.17

9	Join night runs	Annual, 52 Weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	56.30
10	Let your hair air dry when you are not in a hurry	Annual, 52 Weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	15.82
11	Reduce the use of disposable cutlery by choosing "no cutlery required" when ordering takeout food	Annual, 52 Weeks	Disposable chopsticks 4.60tCO ₂ e/t	3.59
12	Turn off your computer and lights at the end of the day	Annual, 52 Weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	0.23
13	Turn off the lights when you go to bed at night	Annual, 365 Days	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	39.97
14	Take shorter showers and try to lower the water temperature by 1°C.	Annual, 52 Weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	26.44
15	Hang out your clothes on sunny afternoons and get some fresh air	Annual, 52 Weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	9.89
16	Turn on the air conditioner if it's too hot and set the temperature to 26 °C or higher	Quarterly, 90 Days	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	33.36
17	Save a bucket of dirty clothes for the wash, which saves water and electricity compared to half a bucket of clothes	Annual, 52 Weeks	Winter residential water use (water for washing machines) 0.4kgCO ₂ e/m ³ Summer residential water use (water for washing machines) 0.19kgCO ₂ e/m ³ 2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	24.58
18	When you run out of cosmetics and toiletries, buy replacements to reduce carbon emissions from wasteful packaging, and it's also more affordable	Annual	Plastic (PE) 4.72kgCO ₂ e/kg	0.85

19	Buy local fruit in season	Annual, 52 Weeks	Vegetables (Worldwide) 0.47kgCO ₂ e/kg Vegetables (China) 0.25kgCO ₂ e/kg	11.44
20	Learn how to cook from bloggers and order takeout less often	Annual, 52 Weeks	Disposable polypropylene takeout container (capacity 650ml, 23g each) 0.19kgCO ₂ e/pc	29.64
21	Eat a light meal	Annual, 52 Weeks	Natural gas 21.6219 tCO ₂ e/10000m ³	18.74
22	Follow the Mediterranean diet if you're trying to lose weight	Annual	Pork 2.89kgCO ₂ e/kg Beef (China) 22.43kgCO ₂ e/kg Mixed fish (Norway) 1.04kgCO ₂ e/kg	401.59
23	Eat all your fruits and vegetables daily	Annual, 365 Days	Food waste incineration - waste treatment stage 65.8kgCO ₂ e/kg	36.03
24	Avoid wasting food	Annual, 365 Days	Food waste incineration - waste treatment stage 65.8kgCO ₂ e/kg	36.03
25	Drink oat milk or eat plant-based foods	Annual, 52 Weeks	Oatly Oat Milk 0.63kgCO ₂ e/L Milk 3.20kgCO ₂ e/L	133.64
26	Take the bus/subway/bike to work	Annual, 52 Weeks	Subway 0.02kgCO ₂ e/person-km Bus 0.077kgCO ₂ e/person-km Average subway, bus and ride 0.032kgCO ₂ e/person-km	377.34
27	Explore the city by bike	Annual, 52 Weeks	/	27.85

28	Donate clothes/make creative crafts from discarded plastic bottles	At a time	General plastic 3.12kgCO ₂ e/kg Printed cotton T-shirt 3.96kgCO ₂ e/pc Artificial leather jacket 20.00kgCO ₂ e/pc Acrylic sweater 23.00kgCO ₂ e/pc Jeans 16.42kgCO ₂ e/pc Leather shoes 8.00kgCO ₂ e/pc Sneakers 14.00kgCO ₂ e/pair	15.32
29	Plant a tree	At a time	Absorption of trees planted in a region (by region): Beijing Reforestation -552t CO ₂ e/km ²	10.11
30	Visit a second-hand bookstore	Annual	Copy paper products made from commercial pulp 1756.18kgCO ₂ e/t	14.40
31	Buy a second-hand bag	At a time	Finished cowhide - average of thicknesses 73.00kgCO ₂ e/m ²	166.88
32	Take the express train to the airport	Annual, 4 quarters	Subway 0.02kgCO ₂ e/person-km	10.39
33	Carpool to/from work	Annual, 52 weeks	Passenger transportation (Diesel cab) 0.045kgCO ₂ e/person-km	93.60
34	Ride a bike once a week	Annual, 52 weeks	/	46.05
35	Take unused disposable toiletries with you on every trip	Annual, 12 months	General plastic 3.12kgCO ₂ e/kg	0.56
36	Refurbish old things	At a time	Beer glass bottle (Chile) 1.78kgCO ₂ e/kg	0.77

37	Buy Grade 1 energy-efficient appliances when remodeling	Quarterly, 90 Days	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	128.93
38	Choose white or light-colored clothing as much as possible, less process will result in less carbon emission and pollution	Annual	White cotton clothing 30.90tCO ₂ e/t Dyed cotton fabric 11.16kgCO ₂ e/pc (250g)	24.90
39	Go for a walk in nature on weekends	Annual, 52 weeks	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	34.69
40	Grow your own vegetables/ flowers/grass	Annual, 52 weeks	Vegetables (China) 0.25kgCO ₂ e/kg	13.00
41	Take an hour off from your cell phone to rest your eyes and brain	Annual, 365 days	2022 National Average Grid Emission Factor 0.5703tCO ₂ e/MWh	109.95

This note has been translated into English by IPE for reference purposes only. If any questions arise related to the accuracy of the information contained in this translated version, please refer to the Chinese version, which is the official version.