

附件一、

IPCC 第四次評估報告溫暖化潛勢值

	GHGs 種類	生命週期 (年)	GWP(20年平均)	GWP(百年平均)	GWP(五百年平均)
	CO ₂	>500(Bern model, 與大氣中 CO ₂ 濃度相關)	1	1	1
	CH ₄	12	72	25	7.6
	N ₂ O	114	289	298	153
	SF ₆	3200	16300	22800	32600
	HFCs				
HFC-23	CHF ₃	270	12000	14800	12200
HFC-32	CH ₂ F ₂	4.9	2330	675	205
HFC-125	CHF ₂ CF ₃	29	6350	3500	1100
HFC-134a	CH ₂ FCF ₃	14	3830	1430	435
HFC-143a	CH ₃ CF ₃	52	5890	4470	1590
HFC-152a	CH ₃ CHF ₂	1.4	437	124	38
HFC-227ea	CF ₃ CHFCF ₃	34.2	5310	3220	1040
HFC-236fa	CF ₃ CHFCF ₃	240	8100	9810	1040
HFC-245fa	CHF ₂ CH ₂ CF ₃	7.6	3380	1030	314
HFC-365mfc	CH ₃ CF ₂ CH ₂ CF ₃	8.6	2520	794	241
HFC-43-10mee	CF ₃ CHFCHFCF ₂ CF ₃	15.9	4140	1640	500
	PFCs				
Nitrogen trifluoride	NF ₃	740	12300	17200	20700
PFC-14	CF ₄	50000	5210	7390	11200
PFC-116	C ₂ F ₆	10000	8630	12200	18200
PFC-218	C ₃ F ₈	2600	6310	8830	12500
PFC-318	c-C ₄ F ₈	3200	7310	10300	14700
PFC-3-1-10	C ₄ F ₁₀	2600	6330	8860	12500
PFC-4-1-12	C ₅ F ₁₂	4100	6510	9160	13300
PFC-5-1-14	C ₆ F ₁₄	3200	6600	9300	13300
PFC-5-1-18	C ₁₀ F ₁₈	>1000	>5500	>7500	>9500
trifluoromethyl sulphur pentafluoride	SF ₅ CF ₃	800	13200	17700	21200

- 說明：
1. 現行 UNFCCC 規範，使用 IPCC AR4 中 GWP 百年平均值，作為計算溫室氣體當量之基礎。
 2. 詳細資料請參考 IPCC AR4，如下網址：https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html
 3. UNFCCC 規範，請參閱第 Decision 24/CP.19 決議文：「Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention」。
- 網址：<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf#page=2>，第 24 頁。

附件二、

2020 年能源平衡表 —
OECD 能源統計格式（熱值單位）

3. 年能源平衡表 (公噸油當量單位) _Yearly Energy Balance (Calorific Unit)

110年(2021)

單位：公噸油當量,10⁷千卡(tonne of oil equivalent,10⁷kilocalorie)

項 目	1 煤及煤產品 Coal and Coal Products C2 ~ C12	2 煙煤-煉焦煤 Bituminous Coal- Coking Coal	3 煙煤-燃料煤 Bituminous Coal- Steam Coal	4 無煙煤 Anthracite	5 亞煙煤 Sub-bituminous Coal	6 褐煤 Lignite	7 泥煤 Peat	8 焦炭 Coke	9 焦炭 Oven Coke	10 煤球 Patent Fuel	11 焦爐氣 Coke Oven Gas	12 高爐氣 Blast Furnace Gas	13 轉爐氣 Oxygen Steel Furnace Gas
1 自產													
2 + 進口	39,930,955	5,003,059	29,202,511	178,429	5,407,206			139,750					
3 - 出口	32,637			756				31,881					
4 - 國際海運													
5 - 國際航空													
6 - 存貨變動	693,311	86,519	740,421	-10,554	-51,842			-71,233					
7 = 初級能源總供給	39,205,007	4,916,540	28,462,091	188,227	5,459,048			179,102					
8 - 產品間轉換(轉出)													
9 - 統計差異	662,433	332,247	-257,692	4,141	542,890			40,847				-0	0
10 - 轉變投入	39,503,971	4,584,293	25,307,355		4,893,614			3,752,672			300,428	545,840	119,769
11 煉焦工場/煤製品業	5,813,867	4,584,293	1,229,574										
12 高爐工場	5,088,875		1,336,203					3,752,672					
13 煉油廠													
14 石化工廠													
15 公用發電廠	19,468,269		14,619,076		4,849,193								
16 自用發電廠	359,454		359,454										
17 公用汽電共生廠	420,729		420,729										
18 自用汽電共生廠	8,352,777		7,342,320		44,421						300,428	545,840	119,769
19 + 轉變產出合計	7,772,923							4,401,599			1,295,095	1,797,911	278,319
20 轉變產出	7,772,923							4,401,599			1,295,095	1,797,911	278,319
21 產品間轉換(轉入)													
22 - 能源部門自用	1,179,653										200,215	903,468	75,971
23 煤礦業													
24 煉焦工場/煤製品業	581,416												
25 高爐工場	598,237										170,352	335,093	75,971
26 油氣礦業											29,863	568,375	
27 煉油廠													
28 發電廠													
29 抽水用電													
30 汽電共生廠													
31 氣體燃料供應業													
32 - 損耗	103,055							87,611			6	12,678	2,760
33 = 最終消費	5,528,819		3,412,428	184,086	22,544			699,570		794,447		335,925	79,819
34 能源消費	5,308,863		3,412,428	138,059	22,544			525,642		794,447		335,925	79,819
35 工業部門	5,308,863		3,412,428	138,059	22,544			525,642		794,447		335,925	79,819
36 礦業及土石採取業(不含煤、油及氣)													
37 食品飲料及菸草業	24,905		24,905										
38 紡織成衣及服飾業	218,255		218,255										
39 皮革及毛皮業													
40 木竹及家具業													
41 紙漿、紙及紙製品業	505,412		505,412										
42 印刷業													
43 化學材料製造業	1,625,978		1,625,700										
44 基本化學材料製造業	1,321,641		1,321,641								278		
45 (基本化學工業)	30,837		30,837										
46 (石油化工原料製造業)	1,290,804		1,290,804										
47 (肥料製造業)													
48 人造纖維製造業	234,584		234,584										
49 樹脂塑膠及橡膠製造業	69,475		69,475										
50 其他化學材料製造業	278										278		
51 化學製品製造業	12,615		12,615										
52 橡膠製品製造業	361		361										
53 塑膠製品製造業	10,983		10,983										
54 非金屬礦物製品製造業	1,001,138		1,001,138										
55 水泥及水泥製品業	975,359		975,359										
56 其他	25,780		25,780										
57 (陶瓷製品製造業)													
58 (玻璃及玻璃製品製造業)													
59 金屬基本工業	1,896,157			138,059	22,544			525,642		794,169		335,925	79,819
60 鋼鐵基本工業	1,896,157			138,059	22,544			525,642		794,169		335,925	79,819
61 非鐵金屬基本工業													
62 (鋁業)													
63 金屬製品製造業													
64 機械設備製造業													
65 電腦通信及視聽電子產品製造業	13,059		13,059										
66 (電子零組件製造業)													
67 運輸工具製造業													
68 精密光學醫療器材及鐘錶製造業													
69 其他工業製品製造工業													
70 用水供應及污染整治業													
71 營造業													
72 其他													
73 運輸部門													
74 國內航空													
75 公路													
76 鐵路													
77 管線運輸													
78 國內水運													
79 其他													
80 農業部門													
81 農牧及林業													
82 漁業													
83 服務業部門													
84 批發及零售業													
85 住宿及餐飲業													
86 運輸服務業													
87 倉儲業													
88 通信業													
89 金融保險及不動產業													
90 工商服務業													
91 社會服務及個人服務業													
92 公共行政業													
93 其他													
94 住宅部門													
95 非能源消費	219,956			46,027				173,929					
96 工業、轉變及能源部門	219,956			46,027				173,929					
97 (石化原料用)													
98 運輸部門													
99 其他													
電能與熱能產出													
1 發電量(千度)	128,846,302		100,720,537		23,630,085					1,392,825	2,539,788	563,066	
2 公用發電廠	93,736,926		70,331,972		23,404,954								
3 自用發電廠	2,136,553		2,136,553										
4 公用汽電共生廠	1,450,270		1,450,270										
5 自用汽電共生廠	31,522,552		26,801,742		225,131					1,392,825	2,539,788	563,066	
6 熱能(公噸)	28,036,250		26,503,704		139,211					409,947	792,757	190,631	
7 汽電共生廠	28,036,250		26,503,704		139,211					409,947	792,757	190,631	

28 柴油 Diesel Oil	29 燃料油 Fuel Oil	30 白精油 White Spirits	31 潤滑油 Lubricants	32 柏油 Asphalts	33 溶劑油 Solvents	34 石蠟 Paraffin Waxes	35 石油焦 Petroleum Coke	36 其他石油產品 Other Petroleum Products	37 天然氣 Natural Gas	38 (自產)天然氣 (Indigenous) Natural Gas	39 (進口)液化天然氣 (Imported) LNG	40 生質能及廢棄物 Biomass and Waste C41 + C45	41 生質能 Biomass	42 固態生質能 Solid Biomass	43 液態生質能 Liquid Biomass
									C38 ~ C39			C41 + C45	C42 ~ C44		
35,023	819,863	1,163	313,620	84,684	94,877	31,712	49,667	60,052	88,157	88,157	23,377,412	1,515,338	168,641	153,549	4
6,705,668	1,873,294	148	498,564	181,126	46,569	2,175	510,189	107,424	23,377,412			38	38		38
160,724	1,326,177														
143,929	36,744	-217	-1,849	12,716	-1,070	-0	44,771	151,269	232,903	136,838	96,065	-5	-5		-5
-6,975,297	-2,416,352	1,233	-183,096	-109,158	49,378	29,537	-505,293	-198,641	23,232,666	-48,681	23,281,347	1,515,381	168,684	153,549	47
134,180	364,066	811	804		2,283			231	24,932,762		24,932,762	38	38		38
-109,111	-560,279							46,572	46,572	553	46,020	0	0	-0	0
70,991	1,036,570							10,726	18,351,453	581	18,350,872	1,117,187	44,248	29,714	
									64,006		64,006				
69,298	924,709								18,187,868		18,187,868				
272	2,184											14,533	14,533		
50	14,631											37,032	171	171	
1,372	95,046							10,726	99,578	581	98,997	1,065,621	29,544	29,543	
11,983,823	4,306,516	506	702,480	493,229	44,074		907,604	1,408,450	25,176,588	1,651,486	23,525,103				
11,929,162	4,306,516	506	702,480	493,229	44,074		907,604	1,353,507	25,176,588	1,651,486	23,525,103				
54,661								54,943	25,176,588	1,651,486	23,525,103				
31,626	84,215						361,352	24,471	516,039	16,756	499,283				
31,365	83,870						361,352	24,471	514,621	16,576	498,045				
									49	49					
252	346								1,237		1,237				
8									132	132	0				
4,880,840	965,592	928	518,580	384,072	91,168	29,537	40,959	1,174,382	4,562,428	1,584,914	2,977,514	398,156	124,397	123,836	9
4,880,840	965,592							11,522	4,562,428	1,584,914	2,977,514	398,156	124,397	123,836	9
111,251	724,096							11,522	3,436,398	633,282	2,803,116	398,147	124,389	123,836	
1,995	2,747								229,501	57,540	171,961	19,345	19,345	19,345	
13,065	48,737								178,082	63,715	114,367				
534	77,496								11,101	1,391	9,711				
6	2,181								5,186	1,940	3,247				
559	34,768								49,330	12,908	36,423	123,831	104,476	104,476	
57	173								5,906	2,228	3,678				
56,448	207,901							15	891,754	81,520	810,234	587	567	14	
54,185	119,927							15	571,260	13,973	557,287	553	553		
54,185)	11,850)							15)	125,347)	8,028)	117,319)	553)	553)		
129	63,177								441,012)	4,096)	436,916)				
2,082	24,797								4,901)	1,850)	3,052)				
50									61,455	33,211	28,244	14	14	14	
1,550	14,501								242,764	29,958	212,806	20			
22	4,180								16,275	4,378	11,896				
513	16,575								86,154	29,693	56,461				
11,528	177,467								73,238	7,716	65,522				
10,378	18,184								206,422	21,188	185,234				
1,150	159,283								266,419	144,772	121,647				
323)	11,545)								11,444	4,517	6,926				
753)	124,752)								254,976	140,255	114,721				
5,289	101,825							11,507	128,260)	105,536)	22,724)				
5,289	65,847							11,507	96,142)	28,831)	67,311)				
1	35,978								622,561	37,621	584,939				
1)	30,838)								525,462	24,532	500,930				
378	8,043								97,099	13,089	84,010				
185	2,489								68,698)	4,227)	64,471)				
5,557	4,376								218,919	23,220	195,699				
5,062)	2,836)								7,572	4,035	3,538				
1,662	5,796								330,932	118,895	212,037				
13	1,083								243,626)	111,857)	131,769)				
753	8,262								40,735	18,495	22,241				
11,136	3,317								55	27	28				
4,027,071	48,739								199,226	5,308	193,918	254,384			
									9,554		9,554				
									104	55	49				
									3,645	1,016	2,629				
3,966,049	48,739											9	9		9
13,423															
47,599	48,739														
382,753	29,181								3,976		3,976				
57,074	1,660								3,976		3,976				
325,679	27,521														
359,764	163,576								379,203	273,219	105,984				
92,004	104,236								27,536	25,276	2,259				
639	1,786								224,699	158,189	66,511				
24,354	4,063								1,072	979	93				
139									71	71					
1,791									100	100					
38	2								1,522	1,510	12				
2,916	169								7,956	7,085	870				
4,506	4,659								50,674	36,092	14,581				
175,888	901								12,751	8,927	3,824				
57,488	47,761								52,823	34,990	17,833				
									742,851	678,413	64,438				
		928	518,580	384,072	91,168	29,537	40,959	1,162,860							
		928	518,580	384,072	91,168	29,537	40,959	1,162,860							
314,229	4,054,113							38,077	108,358,800	19,318	108,339,483	3,800,308	195,794	153,172	
280,987	3,776,454								107,883,397		107,883,397				
28,848	8,940											67,154	41,540		
196	44,494											98,680	484	484	
4,197	224,224							38,077	475,404	19,318	456,086	3,634,474	153,770	152,688	
2,449	979,933							21,836	120,900		120,900	1,008,254	231,524	2,795	
2,449	979,933							21,836	120,900		120,900	1,008,254	231,524	2,795	

44 氣態生質能 Biogas	45 廢棄物 Waste	46 核能 Nuclear	47 水力 Hydro	48 地熱 Geothermal	49 太陽光電 Solar PV	50 風力 Wind	51 電力 Electricity	52 太陽熱能 Solar Thermal	53 熱能 Heat	54 總計 Total C1+C13+C37+C40 +C46 ~ C53	Item
15,088	1,346,697	7,241,539	298,821	7,804	685,436	194,143		72,066		2,950,017	1 Indigenous Production
										125,412,572	2 + Import
										14,309,110	3 - Exports
										1,486,901	4 - International Marine Bunkers
										1,823,456	5 - International Civil Aviation
										555,424	6 - Stock Changes
15,088	1,346,697	7,241,539	298,821	7,804	685,436	194,143		72,066		110,187,698	7 = Total Primary Energy Supply
										27,385,862	8 - Transfers(Input)
										250,925	9 - Statistical Differences
14,535	1,072,939	7,241,539	572,647	7,804	685,436	194,143				109,573,292	10 - Transformation Input
										5,813,867	11 Coke Ovens
										5,088,875	12 Blast Furnaces
										40,572,180	13 Petroleum Refineries
										46,828,571	14 Petrochemical Industry
		7,241,539	572,546	7,797	162,964	193,580				899,586	15 Public Electricity Plants
			102	6	522,472	563				472,442	16 Autoproducer Electricity Plants
14,533	36,862									9,897,772	17 Public Cogeneration Plants
1	1,036,077									107,308,124	18 Autoproducer Cogeneration Plants
			273,826				25,027,713		2,413,704	79,989,746	19 + Transformation Output Total
			273,826				25,027,713		2,413,704	27,318,378	20 Transformation Output
							1,619,099		561,229	6,525,198	21 Transfers(Output)
										581,416	22 - Energy Sector Own Use
										598,237	23 Coal Mines
										3,318	24 Coke Ovens
										3,318	25 Blast Furnaces
										3,832,193	26 Oil and Gas Extraction
										886,350	27 Petroleum Refineries
										341,739	28 Electricity Plants
										73,314	29 Electricity to Pump Up
										39,203	30 Cogeneration Plants
										861,213	31 Gas Companies
										758,158	32 - Losses
553	273,758						22,735,032	72,066	1,852,474	72,899,332	33 = Total Final Consumption
553	273,758						22,735,032	72,066	1,852,474	49,938,028	34 Energy Consumption
553	273,758						13,882,714		1,852,282	26,194,904	35 Industrial Sector
							22,930			29,616	36 Mining and Quarrying(excluding coal,oil and gas)
							390,472	21,317		767,560	37 Food, Beverage and Tobacco
							450,674	49,540		983,889	38 Textile,Wearing Apparel and Accessories
							13,622	26		28,778	39 Leather and Fur
							34,874			42,552	40 Wood, Bamboo and Furniture
	19,355						319,969	5,497		1,041,608	41 Pulp, Paper and Paper Products
							46,766			55,108	42 Printing
553	20						2,885,286	1,663,056		7,665,888	43 Chemical Materials
553							2,124,311	1,553,250		5,970,788	44 Basic Chemical Materials
							545,019)	368,417)		1,134,373)	45 (Basic Industrial Chemicals)
							1,564,823)	1,184,833)		4,816,205)	46 (Petrochemical Materials)
							14,469)			20,210)	47 (Chemical Fertilizers)
							330,816	83,406		773,737	48 Artificial Fibers
							305,008	1,207		646,708	49 Resin, Plastics and Rubber
	20						125,151	25,193		274,655	50 Other Chemical Materials
							114,097	13,296		251,141	51 Chemical Products
							90,995			170,876	52 Rubber Products
							496,744	57,510		799,182	53 Plastic Products
							500,365			1,964,782	54 Non-metallic Mineral Products
							165,894			1,181,390	55 Cement and Cement Products
							334,471			783,391	56 Others
							34,705)			180,551)	57 (Pottery, China and Earthenware)
							249,378)			473,039)	58 (Glass and Glass Products)
							1,701,839	8,939		4,368,257	59 Basic Metal Industries
							1,487,980	4,645		4,008,922	60 Iron and Steel
							213,859	4,294		359,335	61 Others
							80,495)	4,294)		192,319)	62 (Aluminum)
							656,740	1,046		907,238	63 Fabricated Metal Products
							255,079			271,647	64 Machinery and Equipments
							5,165,370	31,879		5,554,984	65 Electrical and Electronic Machinery
							4,763,003)	31,879)		5,048,176)	66 (Electronic Parts)
							210,797			273,013	67 Transport Equipments
							96,568			96,655	68 Precision Instruments
							106,936	175		307,462	69 Miscellaneous Industries
							223,030			496,350	70 Water Supply and Remediation Activities
	254,384						99,560			114,673	71 Construction
										3,645	72 Non-Specified
							133,697			11,533,974	73 Transport Sector
							11,574			47,966	74 Domestic Air
							119,593			11,254,124	75 Road
							2,530			133,016	76 Rail
										2,530	77 Pipeline Transport
										96,338	78 Internal Navigation
											79 Non-Specified
							284,413			709,379	80 Agriculture Sector
							196,209			267,790	81 Agriculture, Animal Husbandry and Forestry
							88,205			441,589	82 Fishing and Aquaculture
							3,905,682	2,162	192	5,240,432	83 Service Sector
							956,159			1,179,948	84 Wholesale and Retail
							599,558		14	1,051,653	85 Hotels and Restaurants
							167,573			201,221	86 Transport Services
							107,307			107,518	87 Storage and Warehousing
							222,485			230,270	88 Communication
							193,236			195,293	89 Finance, Insurance and Real Estate
							149,053			166,806	90 Business Services
							773,255	2,162	20	836,138	91 Social and Personal Services
							384,624			757,855	92 Public Administration
							352,432		159	513,730	93 Activities Not Adequately Defined
							4,528,525	69,904		6,259,339	94 Residential Sector
										22,961,304	95 Non-Energy Use
										22,961,304	96 in Industry/Transf./Energy
										20,450,519)	97 (Feedstocks)
											98 in Transport
											99 in Other Sectors
42,622	3,604,514	27,787,948	6,658,688	9,074	7,970,191	2,257,478				291,019,921	1 Electricity and Heat Output
		27,787,948	6,657,507	9,066	1,894,936	2,250,935				244,278,157	2 Electricity Generated (MWh)
41,540	25,614		1,181	7	6,075,255	6,543				8,324,482	3 Public Electricity Plants
	98,196									1,593,641	4 Autoproducer Electricity Plants
	3,480,703									36,823,641	5 Public Cogeneration Plants
1,082										32,011,985	6 Autoproducer Cogeneration Plants
228,729	776,731									32,011,985	7 Heat Generated (MT)
228,729	776,731									32,011,985	8 Cogeneration Plants

附件三、

能源部門燃料燃燒二氧化碳排放指標

我國能源部門燃料燃燒二氧化碳排放指標

項目 年度	CO ₂ 排放量		碳排放密集度		人均排放	
	萬公噸	成長率 (%)	公斤 CO ₂ / 元	成長率 (%)	公噸 CO ₂ / 人	成長率 (%)
1990	10,947	-	0.02121	-	5.41	-
1991	11,844	8.20	0.02118	-0.16	5.79	7.01
1992	12,606	6.43	0.02081	-1.74	6.10	5.41
1993	13,521	7.26	0.02090	0.41	6.49	6.26
1994	14,310	5.84	0.02057	-1.55	6.80	4.90
1995	15,081	5.39	0.02036	-1.04	7.11	4.49
1996	15,858	5.15	0.02016	-0.97	7.41	4.30
1997	17,084	7.73	0.02048	1.58	7.92	6.78
1998	18,152	6.25	0.02088	1.97	8.34	5.28
1999	19,045	4.92	0.02053	-1.70	8.68	4.08
2000	20,912	9.81	0.02120	3.28	9.45	8.95
2001	21,296	1.83	0.02190	3.28	9.56	1.13
2002	22,055	3.56	0.02150	-1.82	9.83	2.86
2003	23,061	4.56	0.02157	0.32	10.22	3.95
2004	23,993	4.04	0.02098	-2.72	10.59	3.66
2005	24,796	3.35	0.02058	-1.93	10.91	2.97
2006	25,533	2.97	0.02003	-2.64	11.19	2.55
2007	25,921	1.52	0.01903	-4.99	11.31	1.10
2008	24,754	-4.50	0.01803	-5.26	10.76	-4.84
2009	23,587	-4.71	0.01746	-3.15	10.22	-5.05
2010	25,171	6.72	0.01690	-3.20	10.88	6.43
2011	25,710	2.14	0.01665	-1.48	11.08	1.91
2012	25,317	-1.53	0.01604	-3.67	10.88	-1.85
2013	25,407	0.36	0.01571	-2.08	10.88	0.04
2014	25,848	1.74	0.01526	-2.85	11.04	1.48
2015	25,848	0.00	0.01504	-1.45	11.02	-0.25
2016	26,298	1.74	0.01498	-0.41	11.18	1.51
2017	26,946	2.46	0.01486	-1.23	11.44	3.84
2018	26,721	-0.84	0.01433	-3.52	11.33	-0.94
2019	25,882	-3.14	0.01347	-9.33	10.97	-4.11
2020	25,738	-0.56	0.01296	-3.79	10.91	-0.50
2021	26,699	3.73	0.01262	-6.35	11.38	3.72
年均成長率						
2021 相較 2005	0.46		-3.01		0.26	
2021 相較 2016	0.30		-3.38		0.34	

註：本表排放指標係依據燃料燃燒二氧化碳排放量計算，未包括其他溫室氣體。

資料來源：經濟部能源局，2022年9月。

附件四、

能源部門燃料燃燒排放量（間接排放）

二氧化碳 (CO₂) 排放量

(單位：公噸)

年度	能源產業	製造業與營造業	運輸部門	農業	服務業	住宅部	總計
1990	15,568,912	50,484,947	19,728,906	3,600,849	9,414,273	10,667,228	109,465,115
1991	16,025,489	55,082,049	20,974,633	3,464,618	10,732,586	12,163,298	118,442,674
1992	15,741,700	58,901,642	24,137,999	3,404,900	10,965,618	12,906,111	126,057,970
1993	17,212,722	61,829,423	26,211,548	3,533,183	12,061,810	14,357,381	135,206,066
1994	19,121,603	64,214,475	27,644,677	3,585,729	13,508,836	15,027,595	143,102,916
1995	20,193,599	67,413,395	28,928,869	3,729,932	14,126,864	16,417,297	150,809,956
1996	21,152,192	70,272,782	29,919,544	3,843,432	15,749,420	17,641,294	158,578,665
1997	23,958,880	77,212,868	30,702,724	3,589,196	16,823,922	18,547,634	170,835,225
1998	25,614,632	80,660,151	32,034,876	3,078,462	18,622,091	21,508,253	181,518,466
1999	26,055,459	86,612,172	32,982,324	3,137,505	19,603,691	22,055,158	190,446,309
2000	28,541,204	97,724,352	33,451,613	3,575,776	21,935,467	23,893,218	209,121,629
2001	29,658,812	98,637,966	33,488,980	3,661,366	23,031,494	24,478,360	212,956,977
2002	29,295,702	103,388,616	34,798,829	3,717,551	24,111,638	25,233,517	220,545,854
2003	30,968,645	107,534,424	34,768,216	4,169,228	26,275,016	26,891,391	230,606,919
2004	32,734,880	112,781,702	36,144,060	4,354,915	27,054,499	26,859,345	239,929,402
2005	35,232,540	114,368,690	37,157,315	4,002,800	28,576,563	28,618,061	247,955,969
2006	36,814,930	119,781,306	37,102,505	3,101,675	29,749,527	28,781,406	255,331,349
2007	37,616,569	124,553,733	35,903,560	2,545,580	29,599,706	28,994,449	259,213,597
2008	34,127,596	118,533,628	33,846,743	2,980,376	29,428,905	28,619,249	247,536,497
2009	32,871,245	109,860,499	34,161,246	2,563,358	28,115,942	28,295,326	235,867,615
2010	34,733,584	122,639,328	35,286,665	2,503,057	28,602,556	27,942,879	251,708,068
2011	35,080,917	127,001,184	35,768,384	2,573,513	28,251,684	28,420,321	257,096,003
2012	34,626,839	125,670,979	34,952,945	2,687,434	27,756,668	27,471,073	253,165,937
2013	34,372,492	127,590,819	34,887,946	2,695,965	27,516,718	27,005,613	254,069,554
2014	37,286,423	127,370,841	35,368,834	2,805,327	27,914,945	27,734,518	258,480,887
2015	37,149,474	125,756,322	36,233,638	2,811,907	28,588,145	27,936,440	258,475,927
2016	37,281,536	127,008,616	37,324,434	2,816,702	29,032,006	29,518,982	262,982,276
2017	37,865,540	130,626,256	37,008,821	2,876,366	30,425,178	30,659,480	269,461,642
2018	38,040,632	132,432,898	36,011,976	3,081,915	28,294,906	29,345,623	267,207,950
2019	37,596,868	126,555,702	36,243,539	3,057,322	26,991,872	28,375,687	258,820,990
2020	36,162,181	125,436,908	36,519,228	2,962,816	26,590,119	29,709,579	257,380,832
2021	37,094,766	134,441,760	34,704,401	2,990,758	26,536,054	31,223,300	266,991,038

註：本表僅為燃料燃燒 CO₂ 排放統計結果，不包含燃料燃燒 CH₄、N₂O 排放與生質能燃燒溫室氣體排放。
資料來源：經濟部能源局，2022 年 9 月。

甲烷 (CH₄) 排放量

(單位：公噸)

年度	能源產業	製造業與營造業	運輸部門	農業	服務業	住宅部	總排放量
1990	293	2,244	6,067	410	620	487	10,121
1991	286	2,413	6,539	380	639	538	10,794
1992	271	2,546	7,466	374	563	544	11,764
1993	302	2,586	8,087	377	527	573	12,452
1994	342	2,685	8,625	384	615	590	13,241
1995	383	2,817	9,131	395	586	652	13,964
1996	385	2,917	9,578	399	684	670	14,635
1997	410	3,125	9,814	356	624	690	15,020
1998	440	3,255	10,288	296	709	752	15,739
1999	482	3,634	10,659	298	758	803	16,633
2000	533	4,041	10,820	344	809	833	17,381
2001	558	4,247	10,894	355	835	814	17,704
2002	552	4,282	11,129	358	882	851	18,056
2003	613	4,390	11,466	410	1,002	912	18,793
2004	638	4,606	11,806	431	1,004	895	19,380
2005	684	4,640	12,125	383	1,022	917	19,771
2006	690	4,839	11,914	253	1,068	922	19,687
2007	667	4,844	11,590	180	1,093	958	19,332
2008	587	4,590	11,019	241	1,089	952	18,479
2009	578	4,319	11,239	187	1,026	911	18,260
2010	574	4,732	11,389	180	1,029	898	18,802
2011	557	4,993	11,512	182	984	894	19,122
2012	550	4,863	11,347	200	957	875	18,792
2013	508	4,945	11,358	203	980	864	18,859
2014	566	4,854	11,432	212	986	863	18,913
2015	571	4,874	11,696	208	1,038	906	19,293
2016	562	4,864	12,048	207	1,020	945	19,645
2017	574	4,749	11,824	198	1,034	942	19,321
2018	548	4,388	11,473	238	937	919	18,503
2019	548	4,254	11,489	239	926	912	18,369
2020	527	4,211	11,616	214	916	930	18,413
2021	534	4,396	10,762	213	907	949	17,760

資料來源：經濟部能源局，2022年9月。

氧化亞氮 (N₂O) 排放量

(單位：公噸)

年度	能源產業	製造業與營造業	運輸部門	農業	服務業	住宅部	總排放量
1990	93	518	977	31	97	85	1,801
1991	95	567	1,039	31	111	99	1,940
1992	102	635	1,187	31	122	113	2,190
1993	114	660	1,284	32	138	132	2,360
1994	131	689	1,349	33	152	138	2,491
1995	141	720	1,404	34	160	152	2,611
1996	158	775	1,439	36	186	174	2,768
1997	171	841	1,472	34	202	184	2,905
1998	187	886	1,533	30	221	219	3,076
1999	208	976	1,577	31	234	223	3,248
2000	251	1,121	1,598	35	270	253	3,529
2001	269	1,185	1,596	36	283	265	3,633
2002	276	1,230	1,667	37	306	283	3,800
2003	305	1,317	1,665	42	340	314	3,983
2004	315	1,387	1,725	43	343	308	4,120
2005	297	1,459	1,772	40	361	328	4,257
2006	318	1,527	1,773	33	376	333	4,360
2007	329	1,588	1,713	29	376	337	4,371
2008	295	1,523	1,612	32	369	328	4,158
2009	295	1,441	1,620	28	353	326	4,063
2010	289	1,545	1,678	27	343	308	4,189
2011	286	1,592	1,702	28	337	311	4,255
2012	279	1,576	1,669	28	332	300	4,184
2013	256	1,596	1,666	28	326	294	4,165
2014	274	1,570	1,688	29	323	297	4,180
2015	270	1,527	1,729	29	322	291	4,168
2016	268	1,530	1,775	29	329	311	4,241
2017	281	1,556	1,757	30	339	320	4,282
2018	280	1,560	1,720	31	319	306	4,217
2019	270	1,496	1,715	31	306	298	4,115
2020	265	1,471	1,730	30	293	304	4,093
2021	261	1,534	1,645	30	287	316	4,073

資料來源：經濟部能源局，2022年9月。



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