Justice in GHGs Reduction: a Suggestion on Emission Quota Distribution

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1. Current Situation

2. China’s Practice

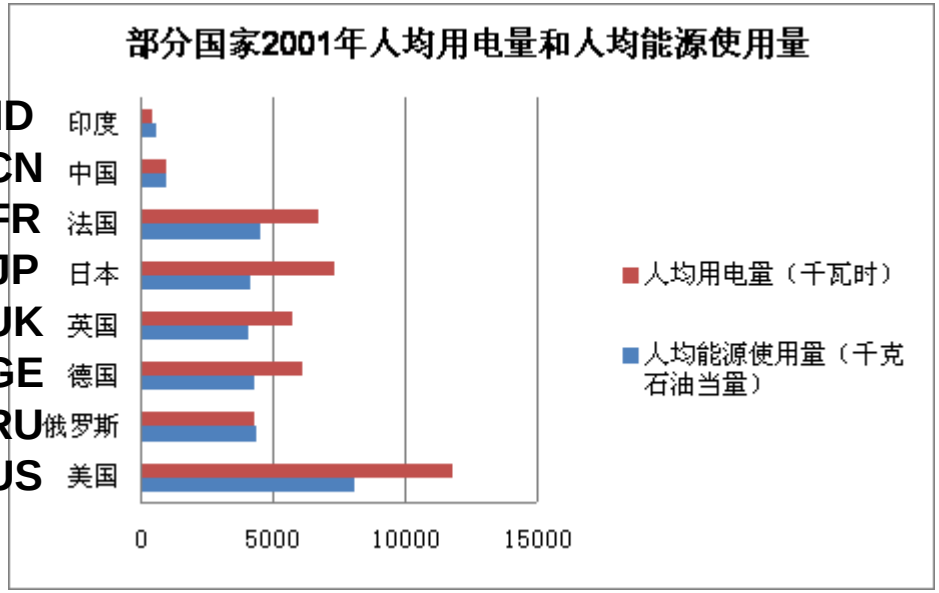
3. A Suggestion on Emission Quota Distribution

1. Current Situation

Selected Indicators for 2006

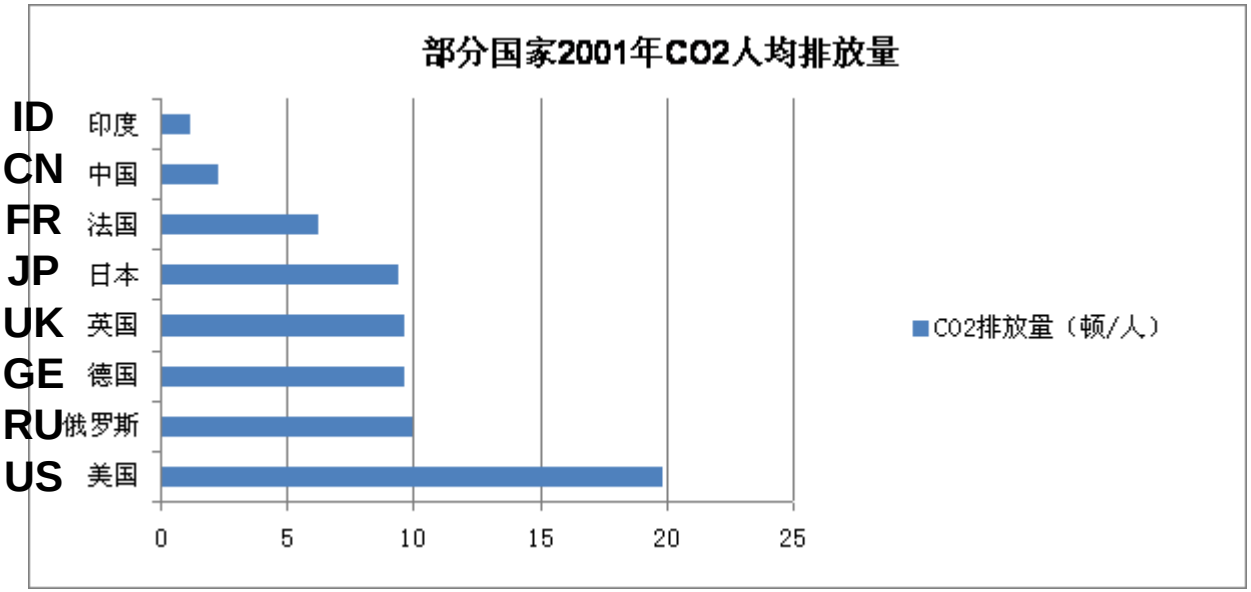
Region/ Country/ Economy	Popu-lation (million)	GDP (billion 2000$)	GDP (PPP) (billion 2000$)	Energy prod. (Mtoe)	Net Imports (Mtoe)	TPES (Mtoe)	Elec. cons.[a] (TWh)	CO_2 emissions[b] (Mt of CO_2)	Per capita CO^2 Emi-ssion
World	6536	37759	57564	11796	-	11740[c]	17377	28003[d]	4.28
OECD	1178	29169	31158	3842	1845	5537	9872	12874	10.9
Middle East	189	838	1456	1529	-990	523	599	1291	6.83
Former USSR	284	568	2266	1610	-577	1017	1274	2395	8.43
Non-OECD Europe	54	162	477	64	45	108	171	271	5.01
China	1319	2315	8916	1749	161	1897	2716	5648	4.28
Asia	2120	2139	7661	1187	176	1330	1414	2718	1.28
Latin America	455	1796	3425	704	-169	531	808	972	2.13
Africa	937	773	2207	1110	-489	614	522	854	0.91

Information Source: Key World Energy Statistics, IEA, 2008



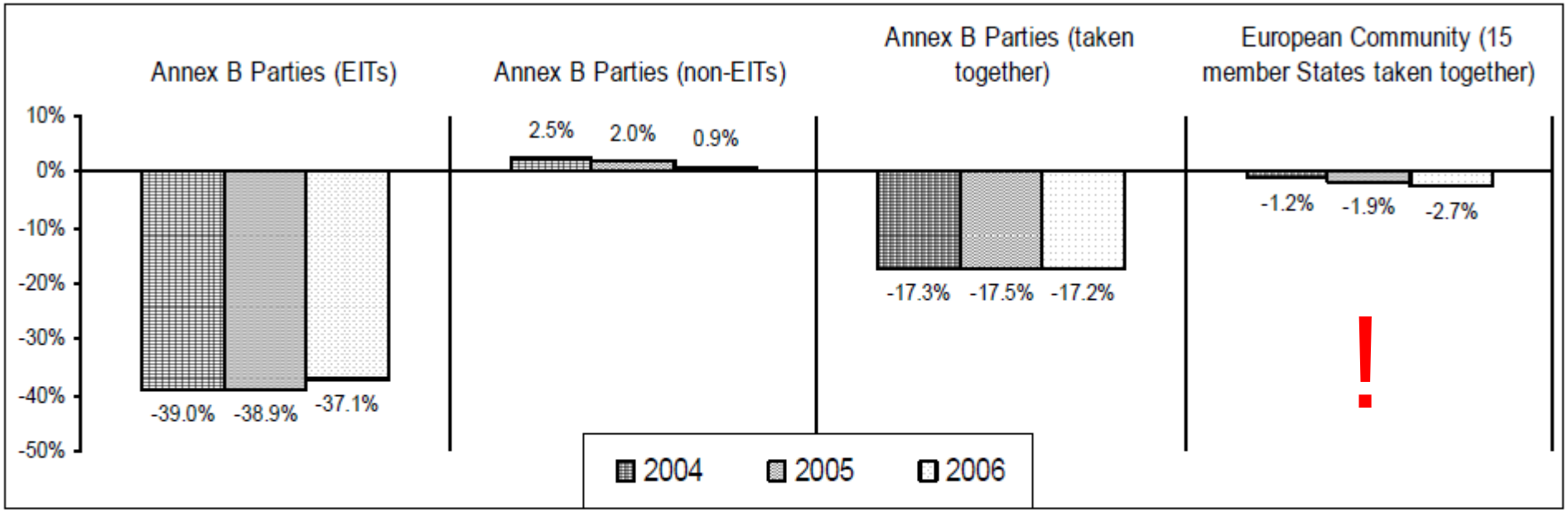
Per capita consumption of electricity and energy, 2001

Per capita emission of CO^2



Information Source: World Bank, World Development Statistics (2004)（世界银行:《2004年世界发展数据手册》，中国财政经济出版社，2005年1月出版）。

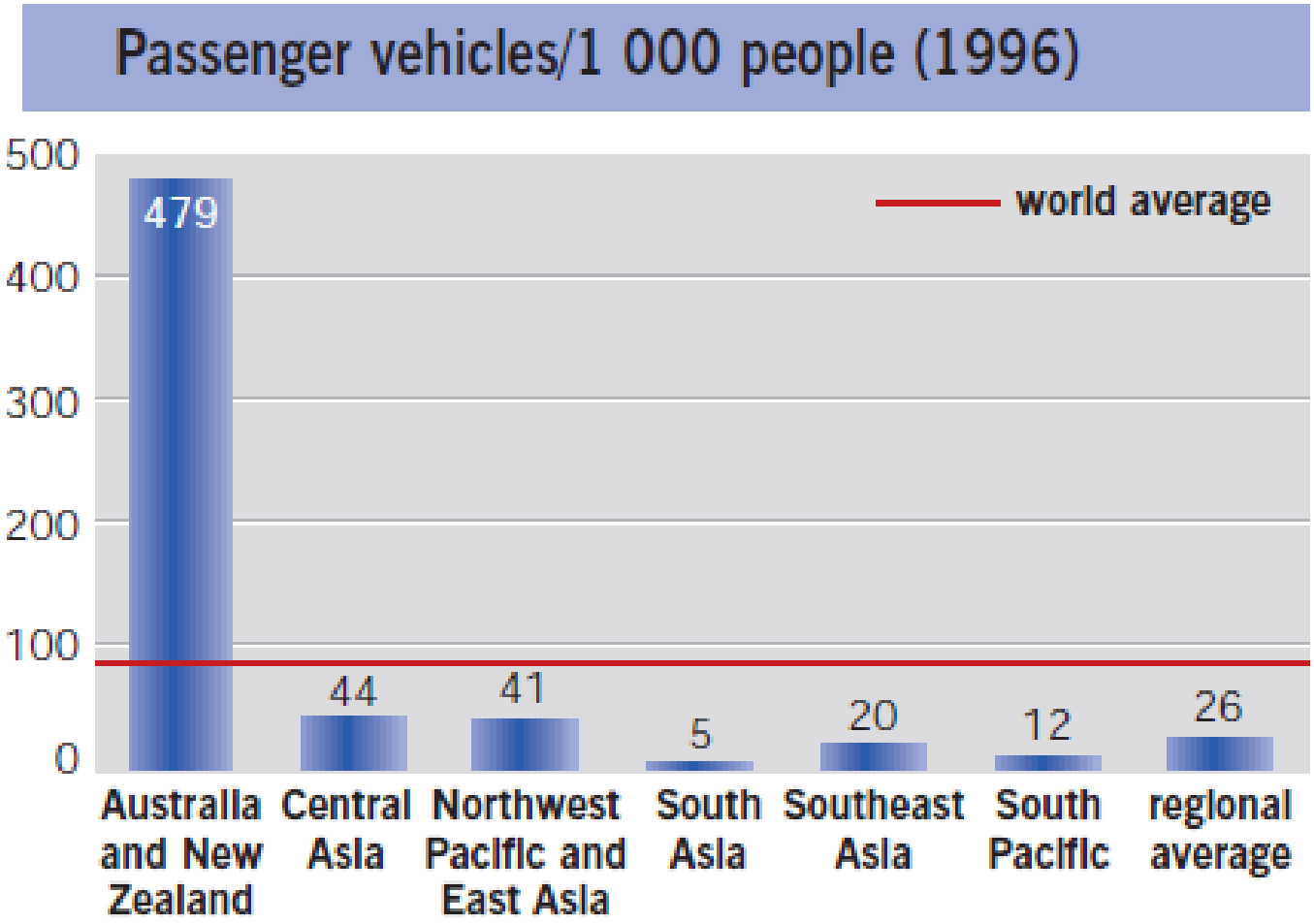
Change in total greenhouse gas emissions for the period 2004–2006 from the base year



Abbreviations: Annex B Parties = Parties to the Convention that are also Parties to the Kyoto Protocol with commitments inscribed in Annex B to the Kyoto Protocol, Annex B Parties (EITs) = Annex B Parties with economies in transition, Annex B Parties (non-EITs) = Annex B Parties that do not have economies in transition.

Note: The figure does not include emissions from Australia, Belarus and Croatia for the period 2004–2006. The emissions data are available for the period 2004–2006 but there is no information on the base year emissions; in order to be consistent in the analysis, the emissions for the period 2004–2006 have not been included in the figure.

Information Source: CONFERENCE OF THE PARTIES SERVING AS THE, MEETING OF THE PARTIES TO THE KYOTO PROTOCOL, Fourth session, Poznan, 1–12 December 2008, Annual compilation and accounting report for Annex B Parties under the Kyoto Protocol; UNFCCC, Distr. GENERAL, FCCC/KP/CMP/2008/9/Rev.1, 27 November 2008



Despite the heavy air pollution in Asia's cities, the number of vehicles per capita is well below the global average in all sub-regions except Australia and New Zealand

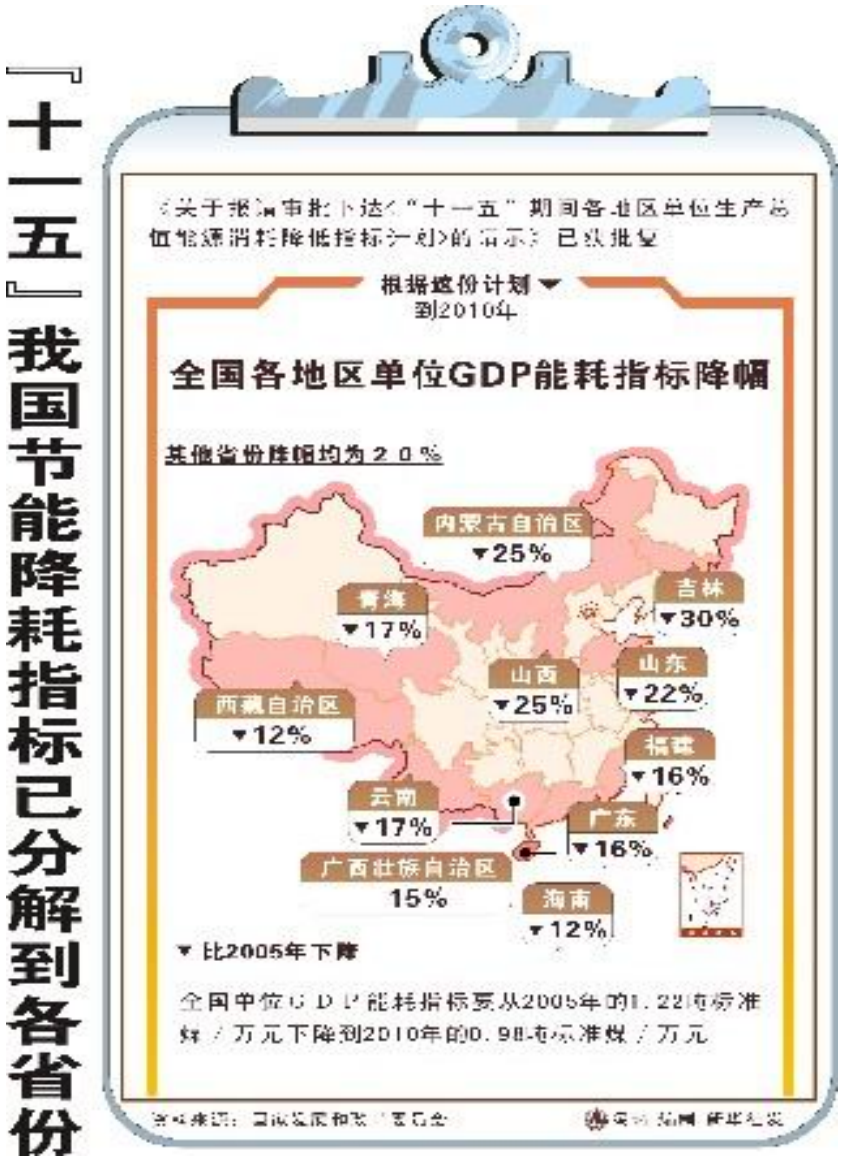
Source: World Bank 2000

Information Source: World Environment Outlook III, p. 221

2. China’s Practice

- China is the Second or soon to be the first largest emitter of GHGs.
- But the Chinese share of GHGs in climate system is small comparing to the over 2000 years accumulation of GHGs emitter by industrialized countries.
- China is very generous: provide the world with products but keeping pollutants and GHGs emission in home.
- Impacts of climate change upon China: Damage is much more than that of benefits. (Report of China Academy of Science), 2006
- The Eleventh Five Year Planning on Economic and Social Development (2006-2010), 2006
- National Programme on Climate Change, 2007

National Compulsory Targets for Reduction of Energy Consumption Per Unite of GDP, 2005 ~ 2010



20% reduction in five years.

- **Equal to 1.4 billion tons of CO2.**
- **About two times of the EU target for 2012; the target of EU by 2012 is 0.682 billion.**
- **About seven times of the US target of 2010; the target of USA by 2010 is 0.183 billion tons.**

Christian Science Monitor, April 4, 2007

Mitigation
Industrial Adjustment

- **Remove small, low efficient coal burning power plants in Inner Mongolia Autonomous Region, April, 2007**

Decrease of CO^2 Emission Per Unite of GDP

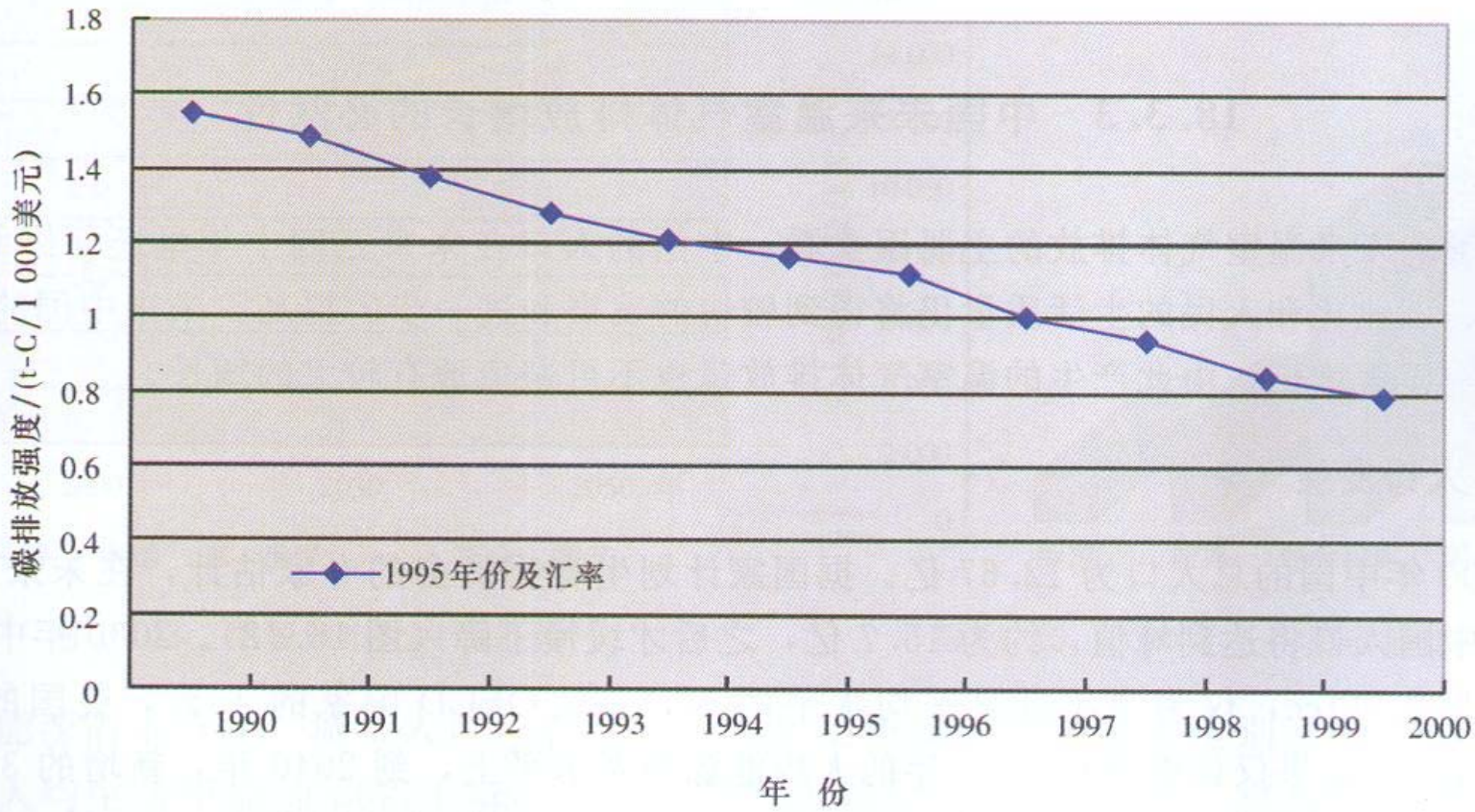


图 18.11 1990～2000 年中国 GDP 碳排放强度趋势

Trend of carbon emission per unit of GDP, China, 1990 - 2000

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

Decrease of GDP Energy Intensity

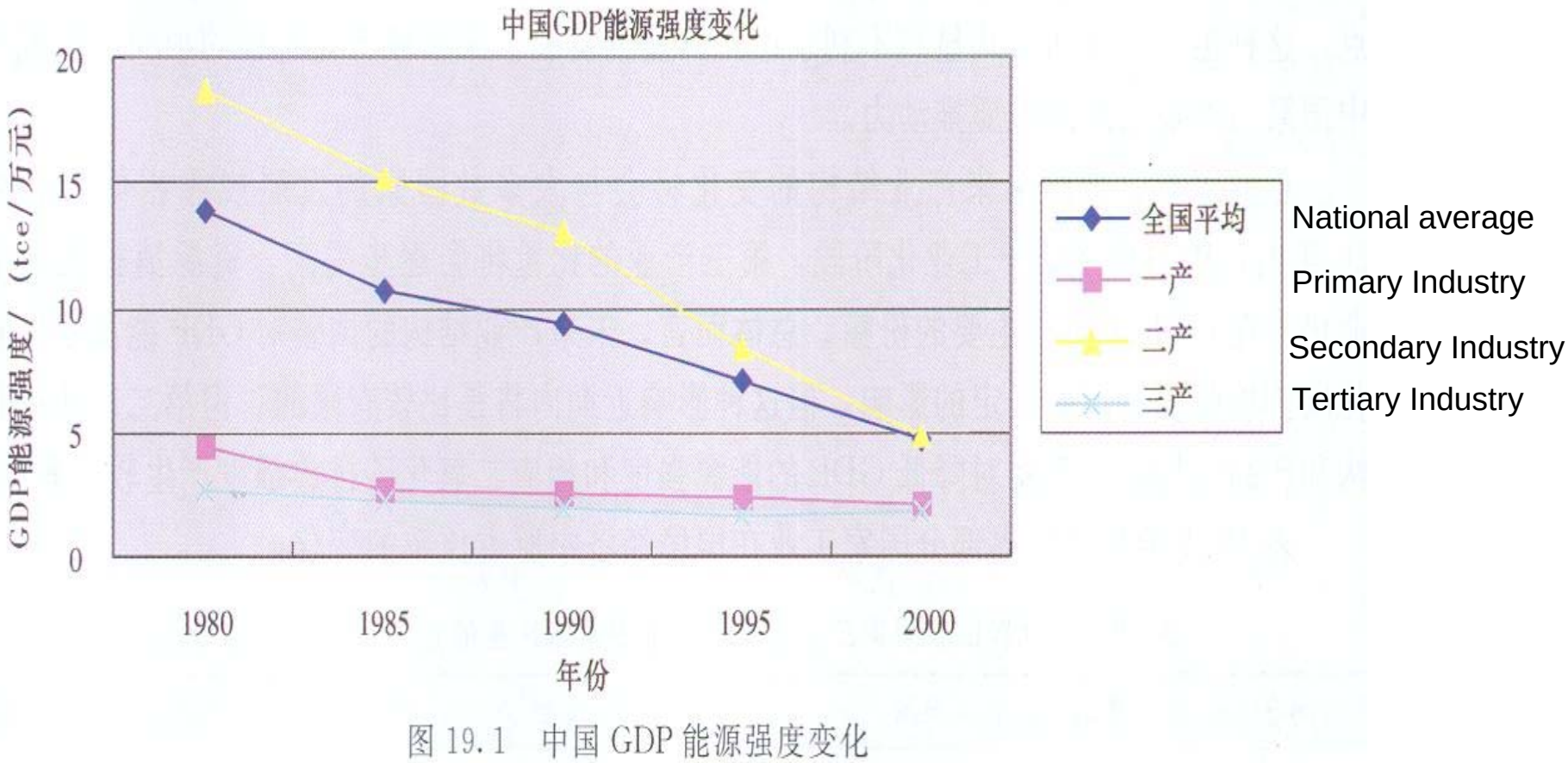


图 19.1 中国 GDP 能源强度变化

Change of GDP Energy Intensity, China, 1980 -2000

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

Improving Energy Efficiency (Iron and Steel Industry)

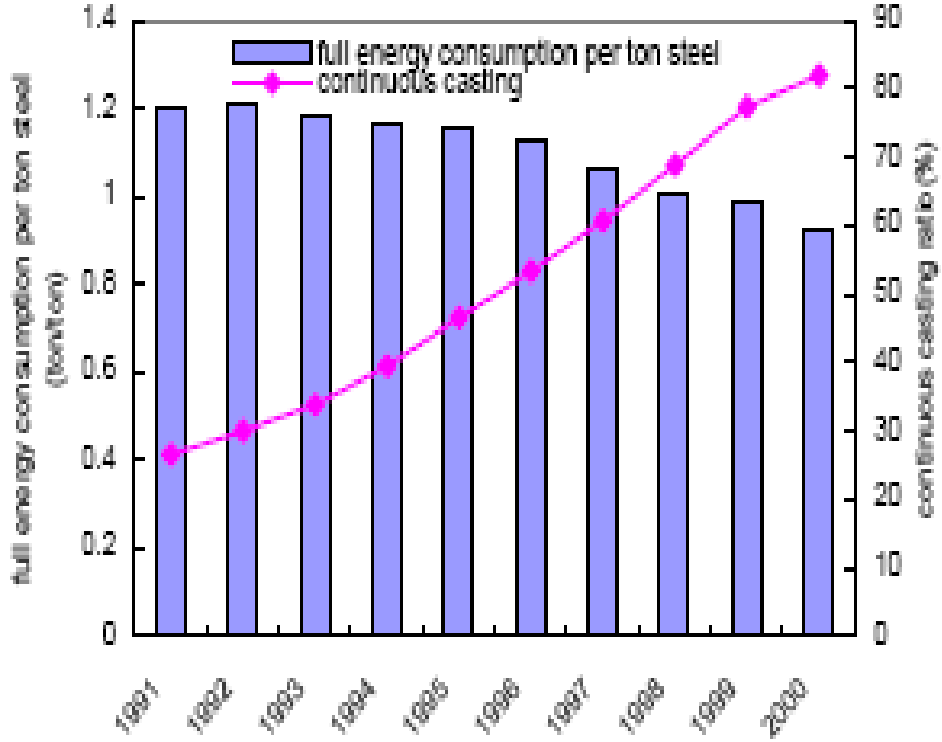
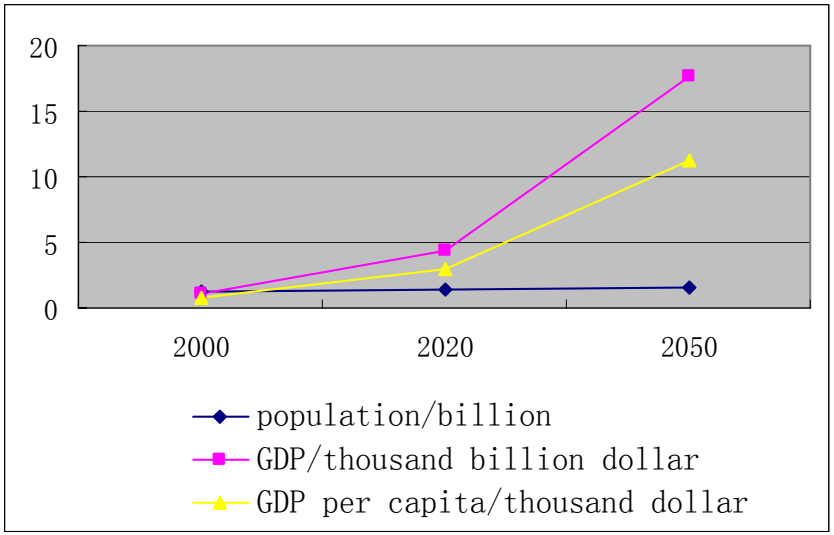
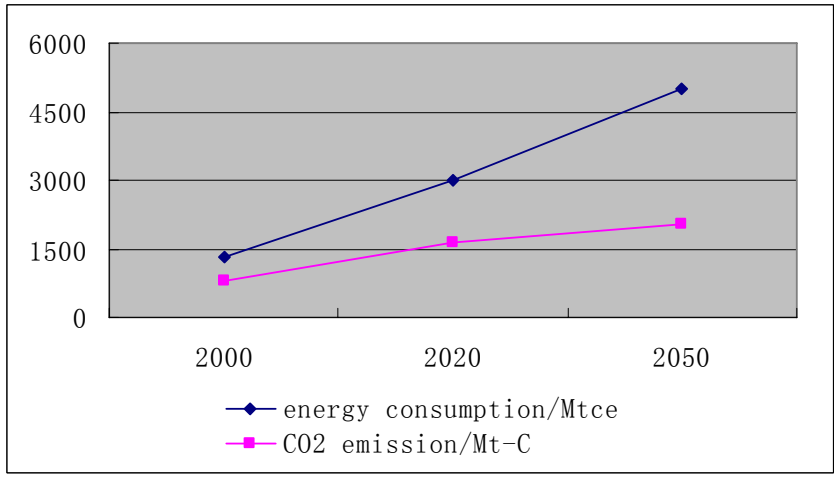
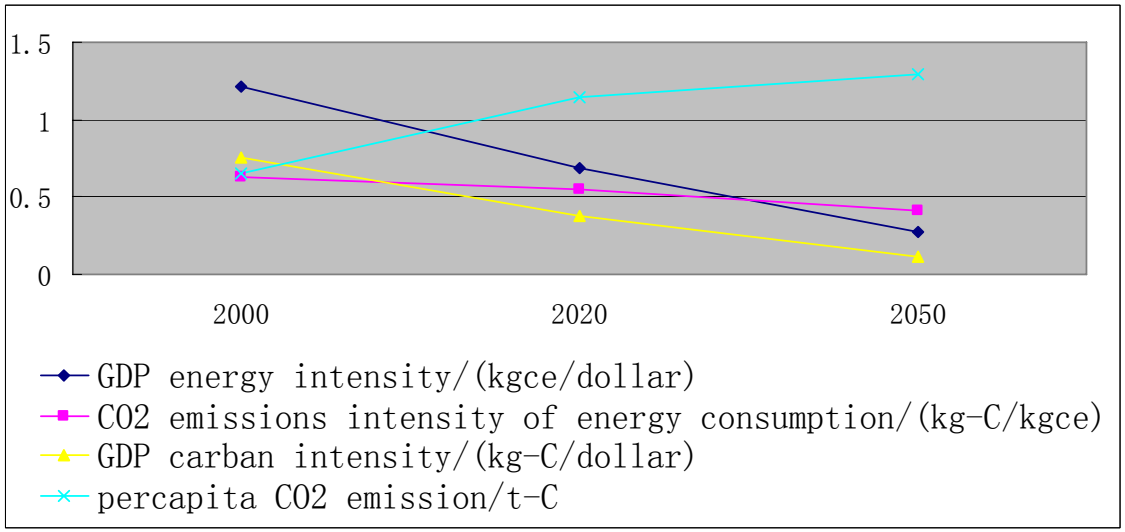


Figure 4.5 Continuous casting ratio of steel-making in iron and steel industry and changes of energy consumption per ton steel (1991～2000)

Trend of Development







Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

Trend of Development

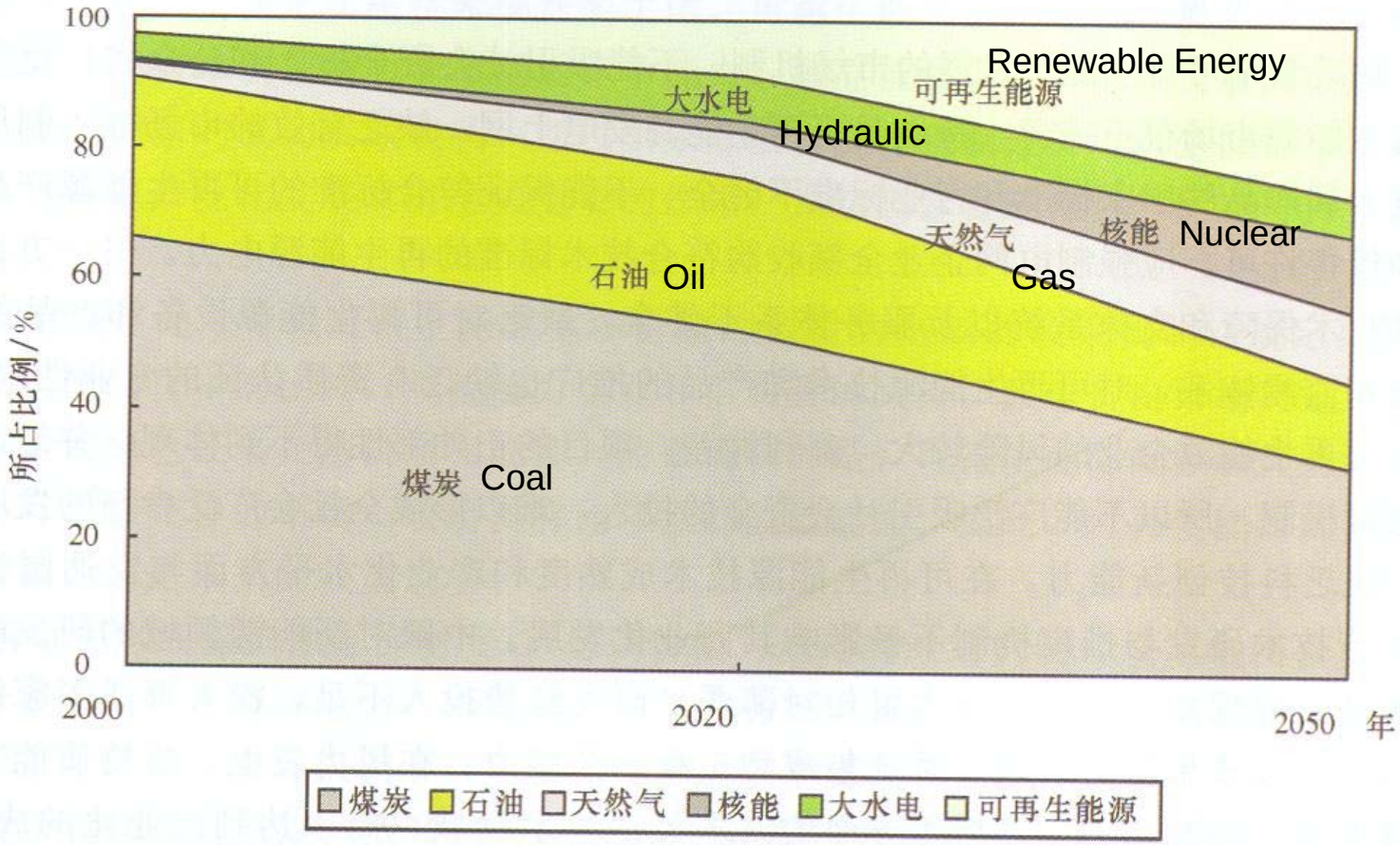
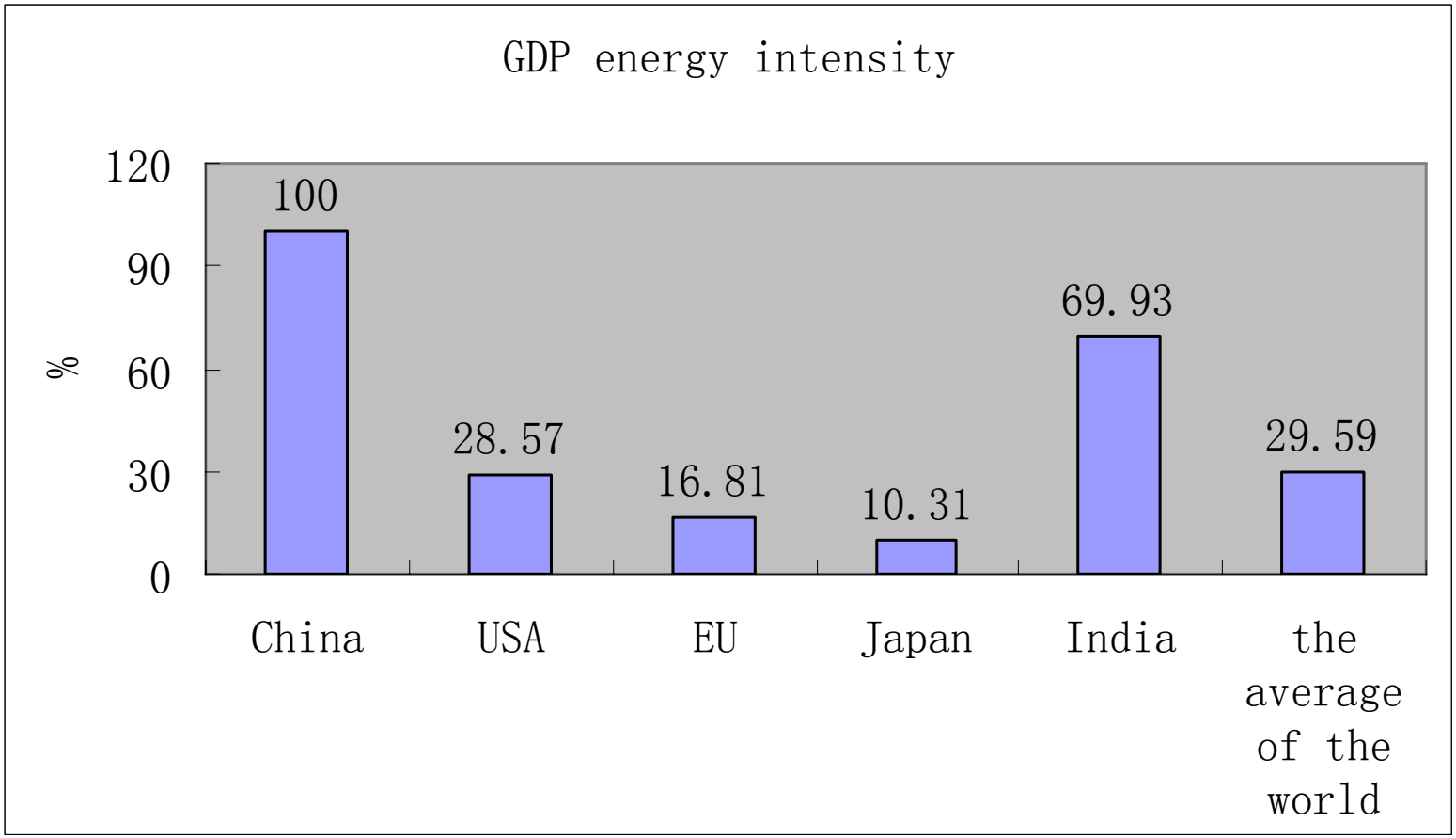


图 20.1 中国未来一次能源构成变化趋势

Trend of energy structure change, China, 2000 - 2050

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

Comparative GDP Energy Intensity



3. A Suggestion on Emission Quota Distribution

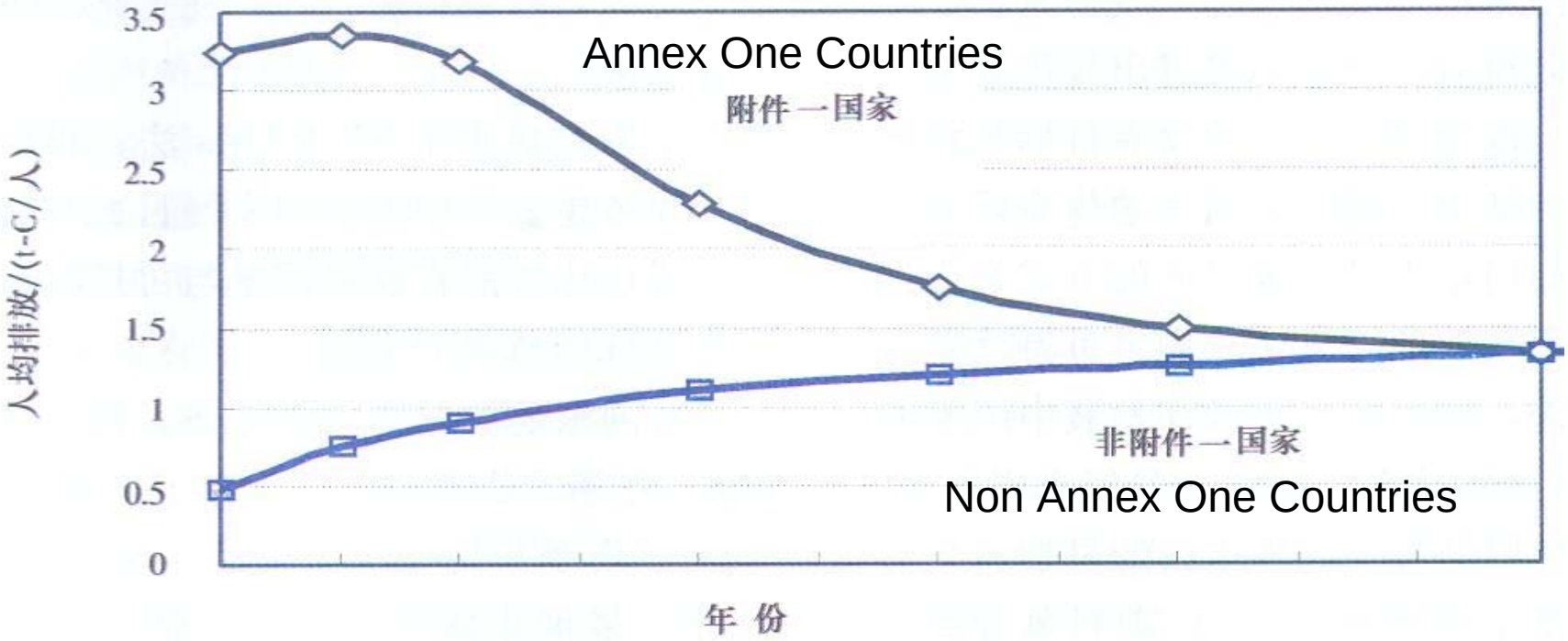


图 23.4 趋同分配方法的示意图

Method A for distribution of GHGs emission quota

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

The Suggestion

Per capita emission (t-C)

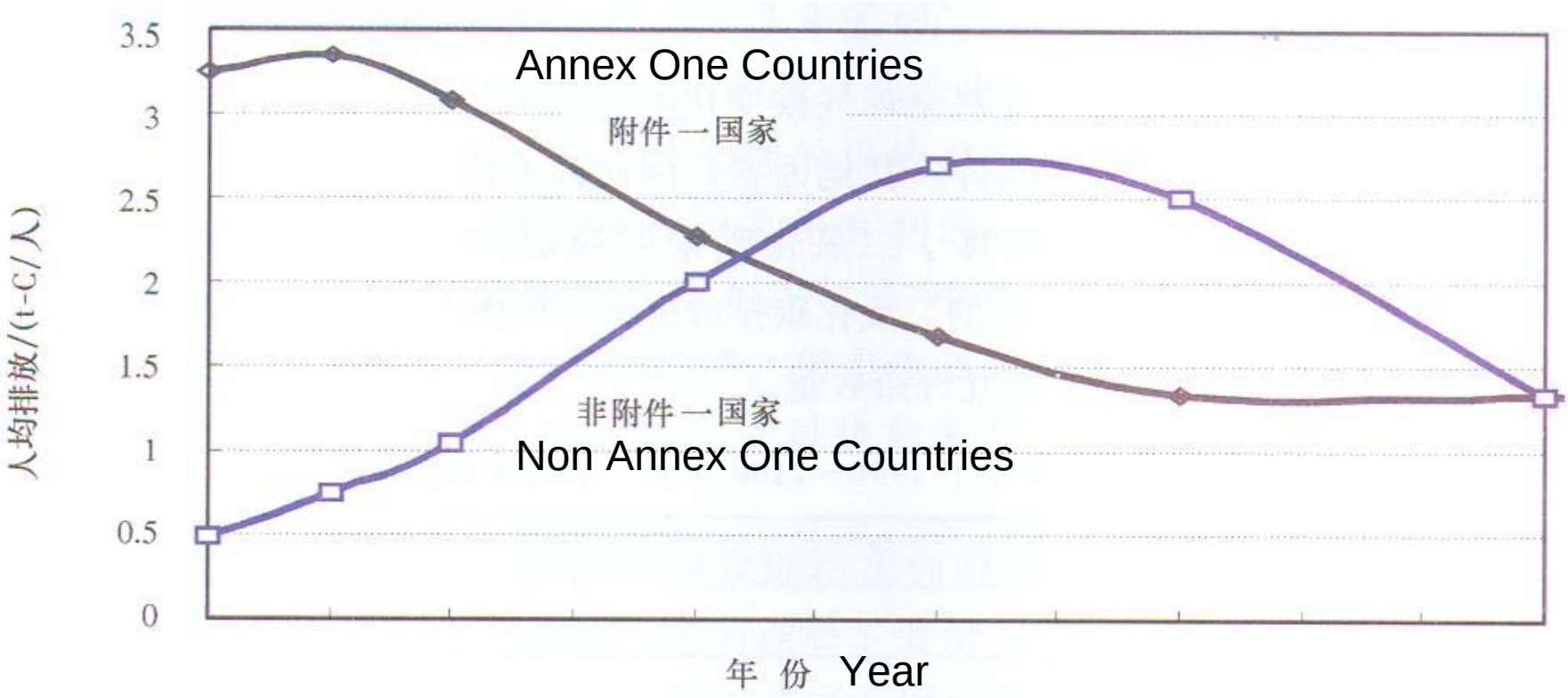


图 23.5 两个趋同分配方法的示意图[10]

Method B for distribution of GHGs emission quota

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

Common but Differentiated Responsibility

Per capita emission (t-C)

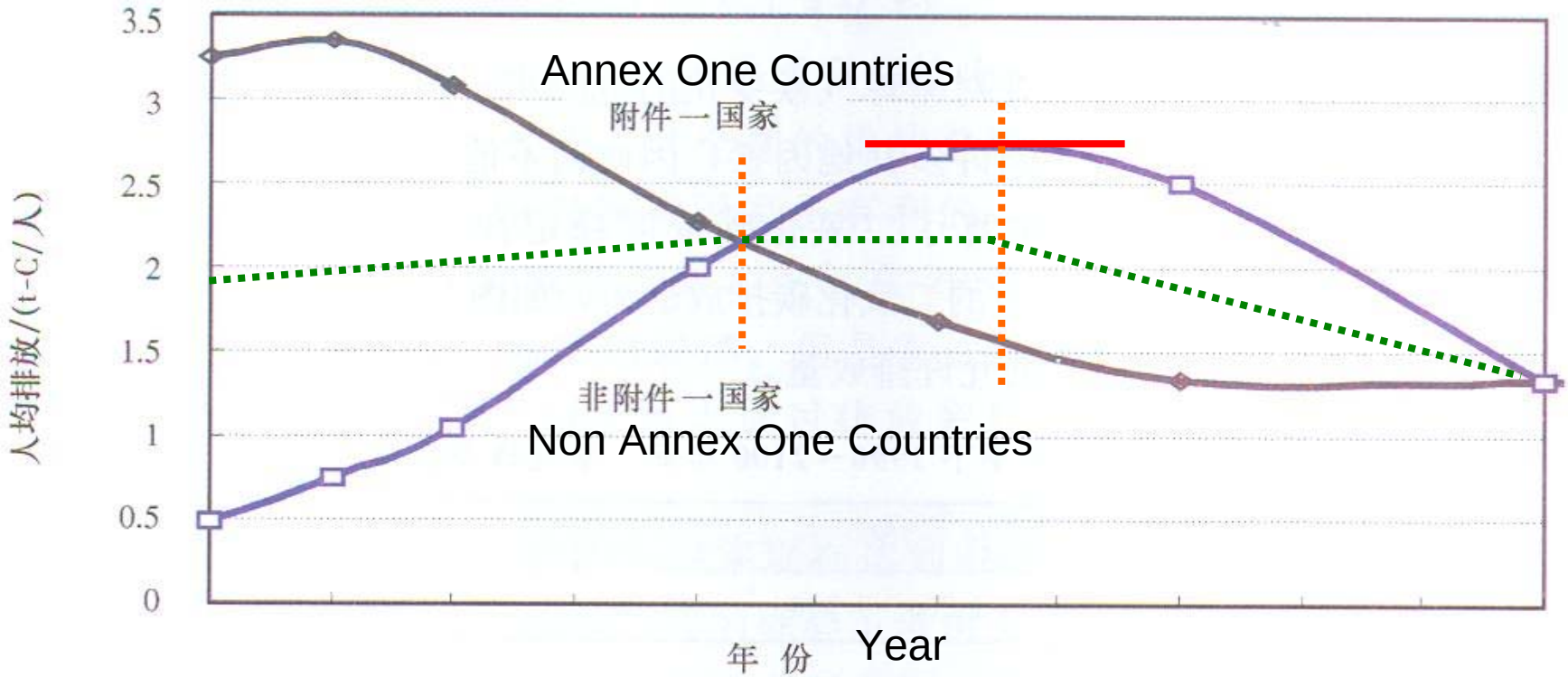


图 23.5 两个趋同分配方法的示意图[10]

Method B for distribution of GHGs emission quota

Information Source: China's National Assessment Report on Climate Change, Science Press, Beijing, 2007 (Chinese Version).

The End

Thanks