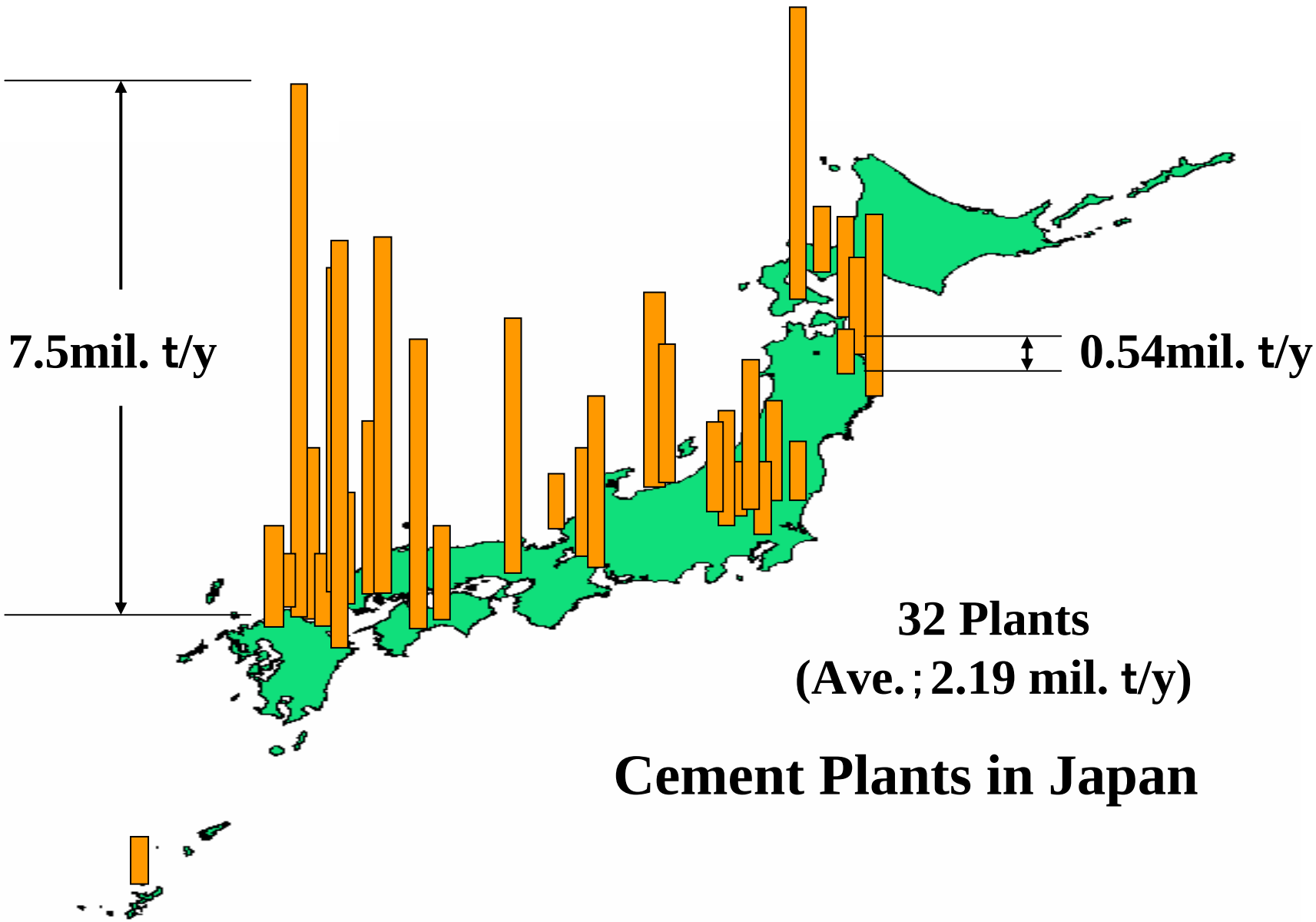
Session 2

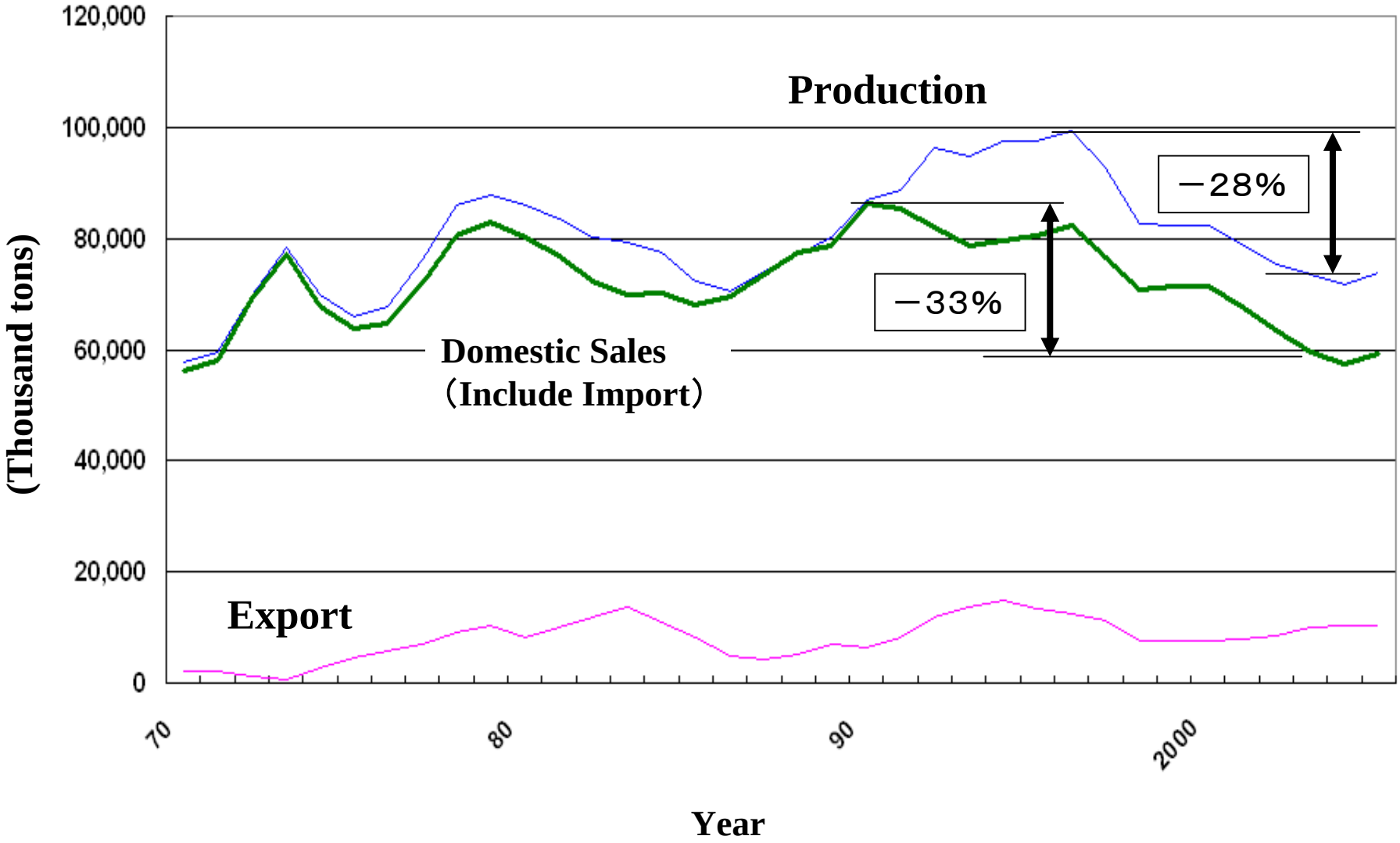
Cement Industry's Status and Activities for GHG Emissions Reduction in Japan

Sept. 2006

Japan Cement Association

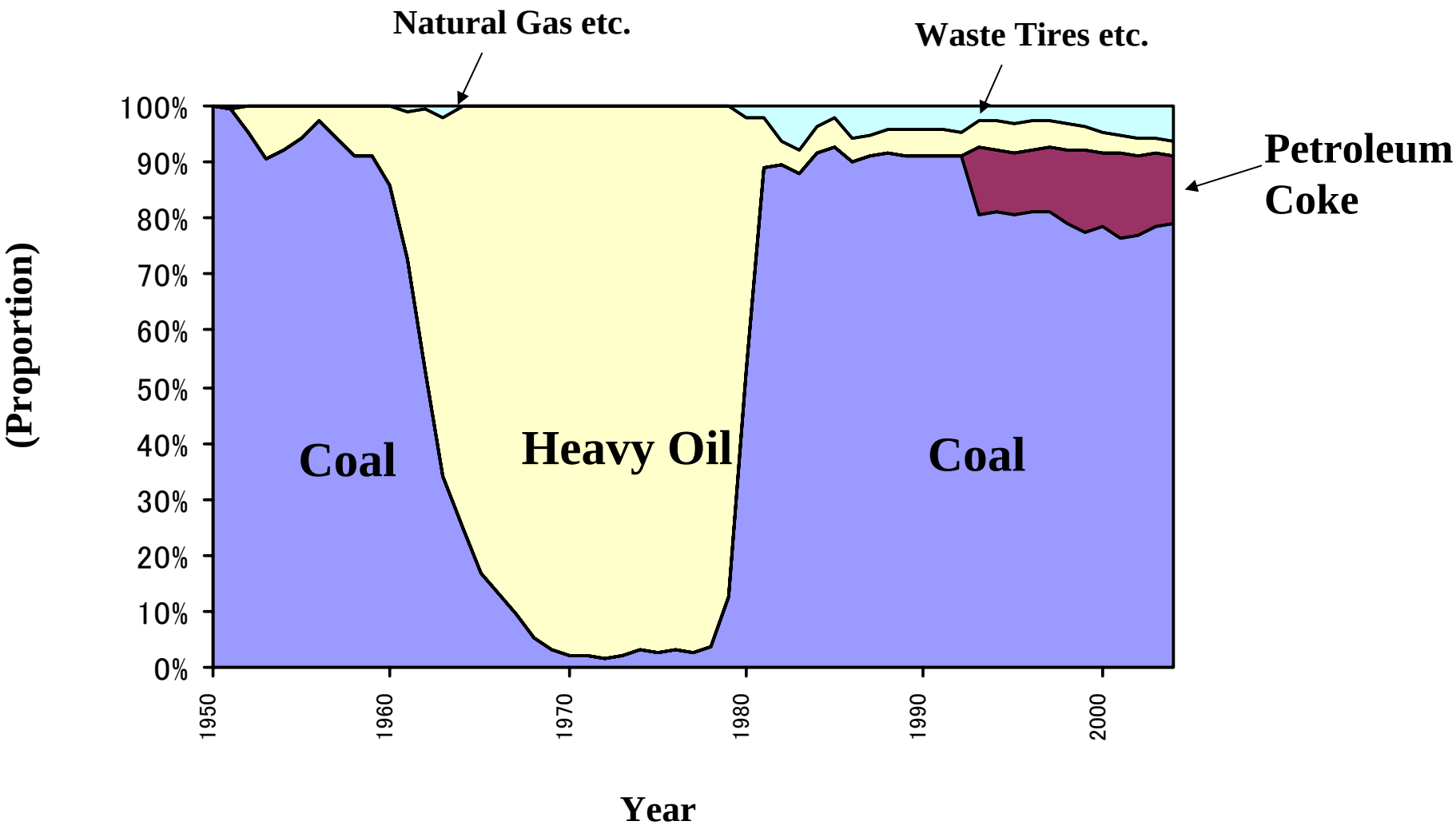

7.5mil. t/y
0.54mil. t/y
32 Plants
(Ave.；2.19 mil. t/y)
Cement Plants in Japan

Cement Production in Japan

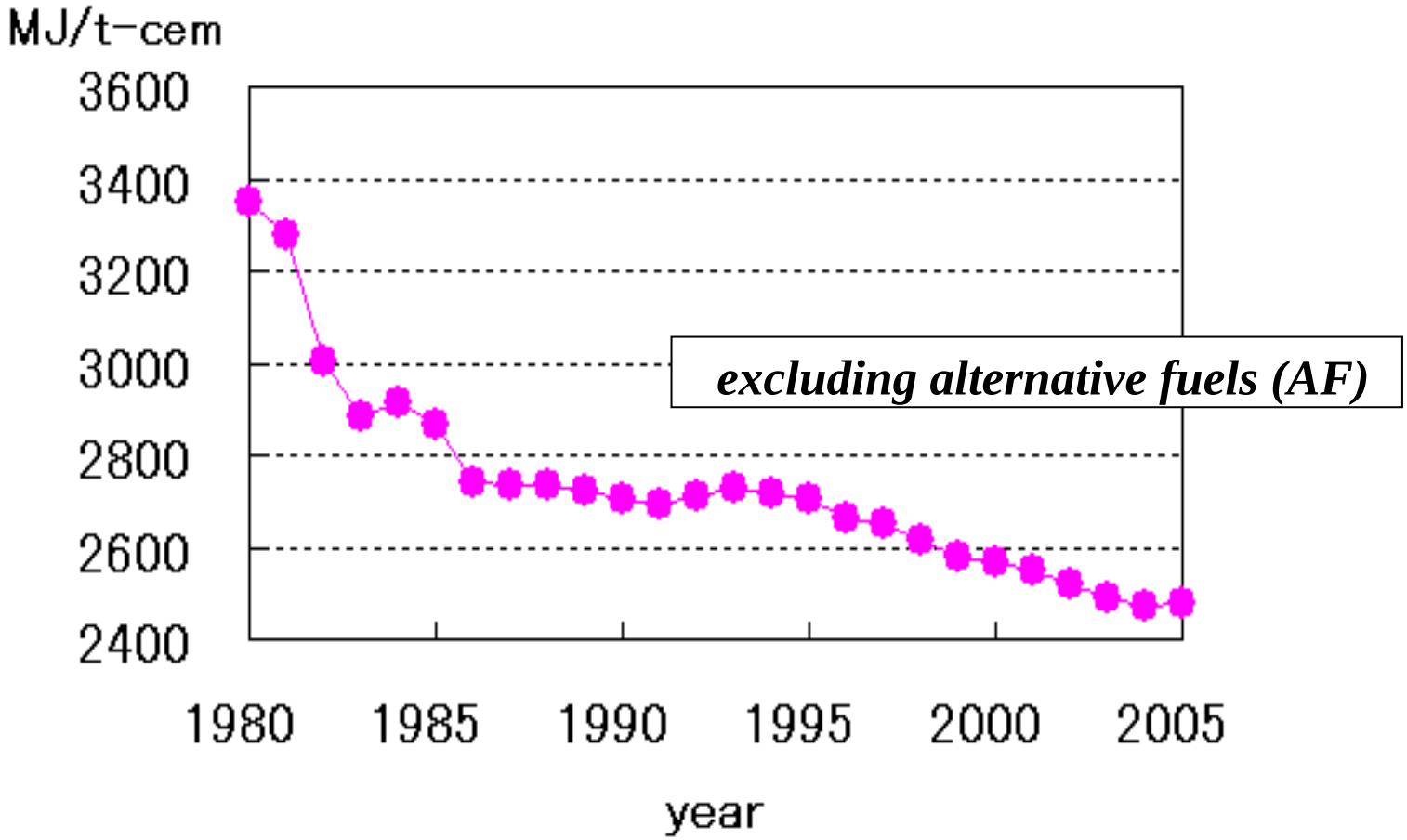


Class		2005/4-2006/3（1000t）	Ratio(%)
Portland cement	OPC	49,438	72
	High-early-strength	3,101	
	Moderate heat	807	
	Sulfate resistive	4	
	Other classes	179	
	Subtotal	53,528	
Blended cement	Blast furnace slag	15,485	22
	Fly ash	194	
	Other classes	430	
	Subtotal	16,109	
Total for domestic use		69,637	
Exported		4,294	6
	Total	73,931	

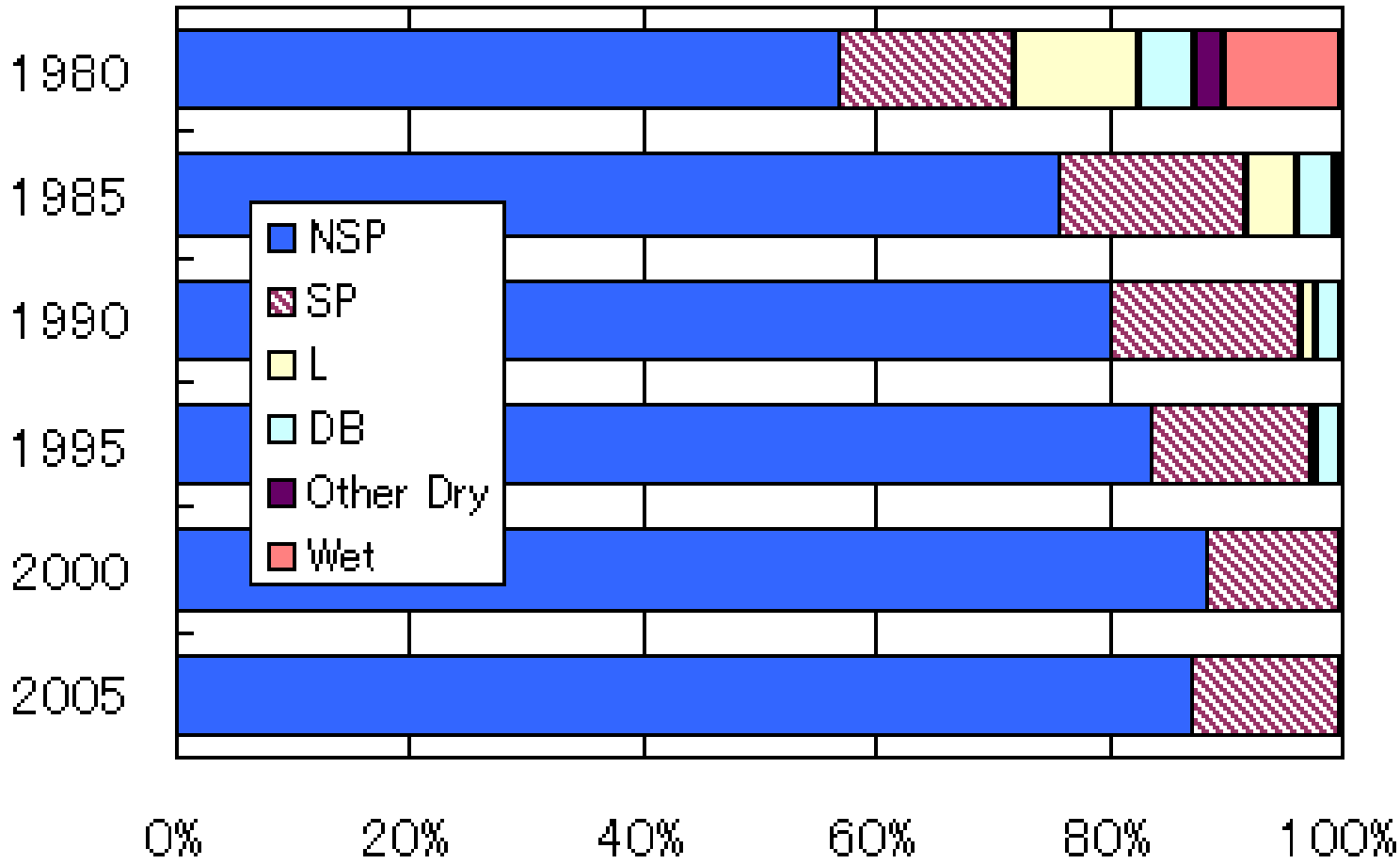
Energy Use in Cement Industry



Change in Specific Heat Consumption for Cement Manufacturing

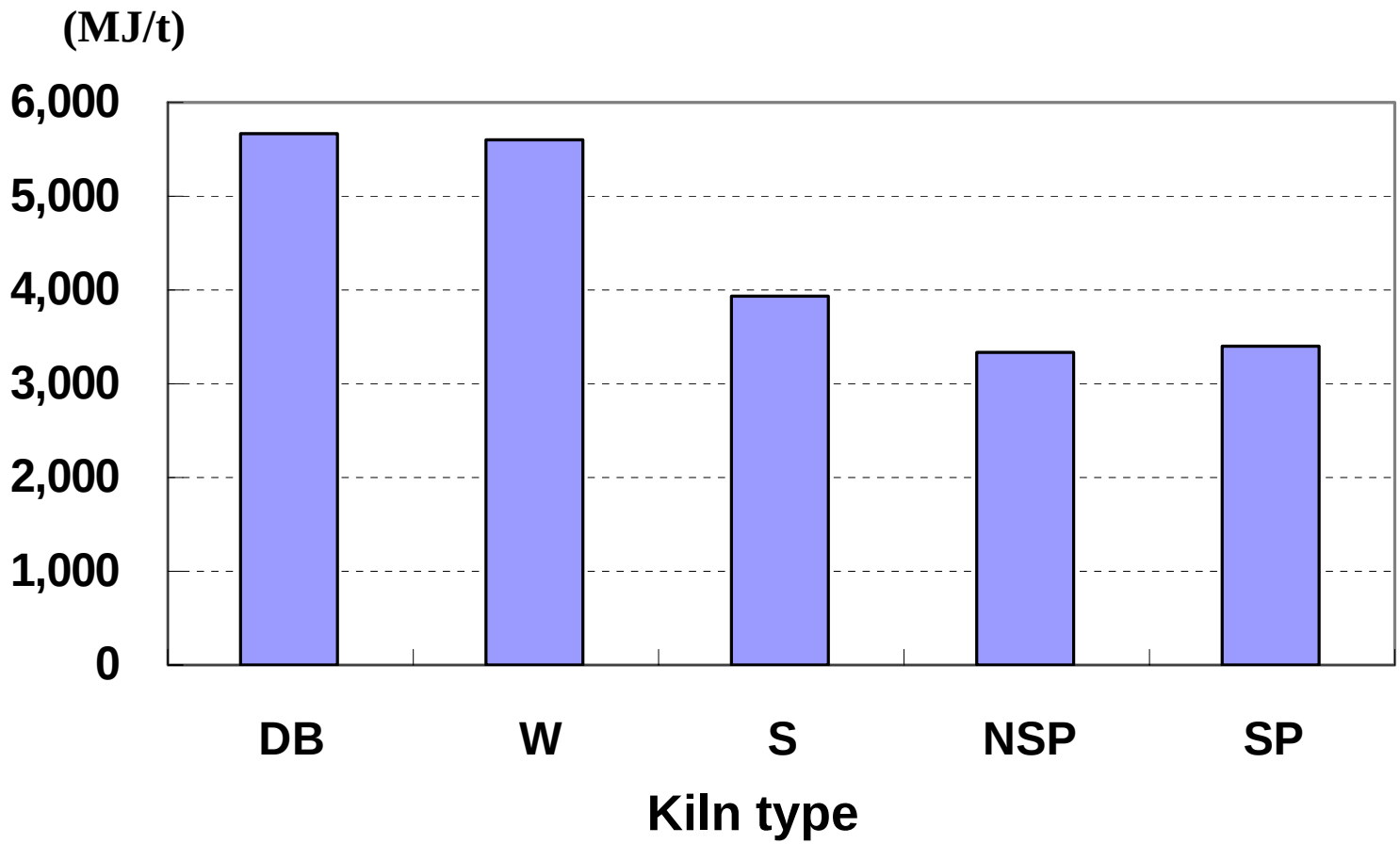


Transition of kiln type in Japan

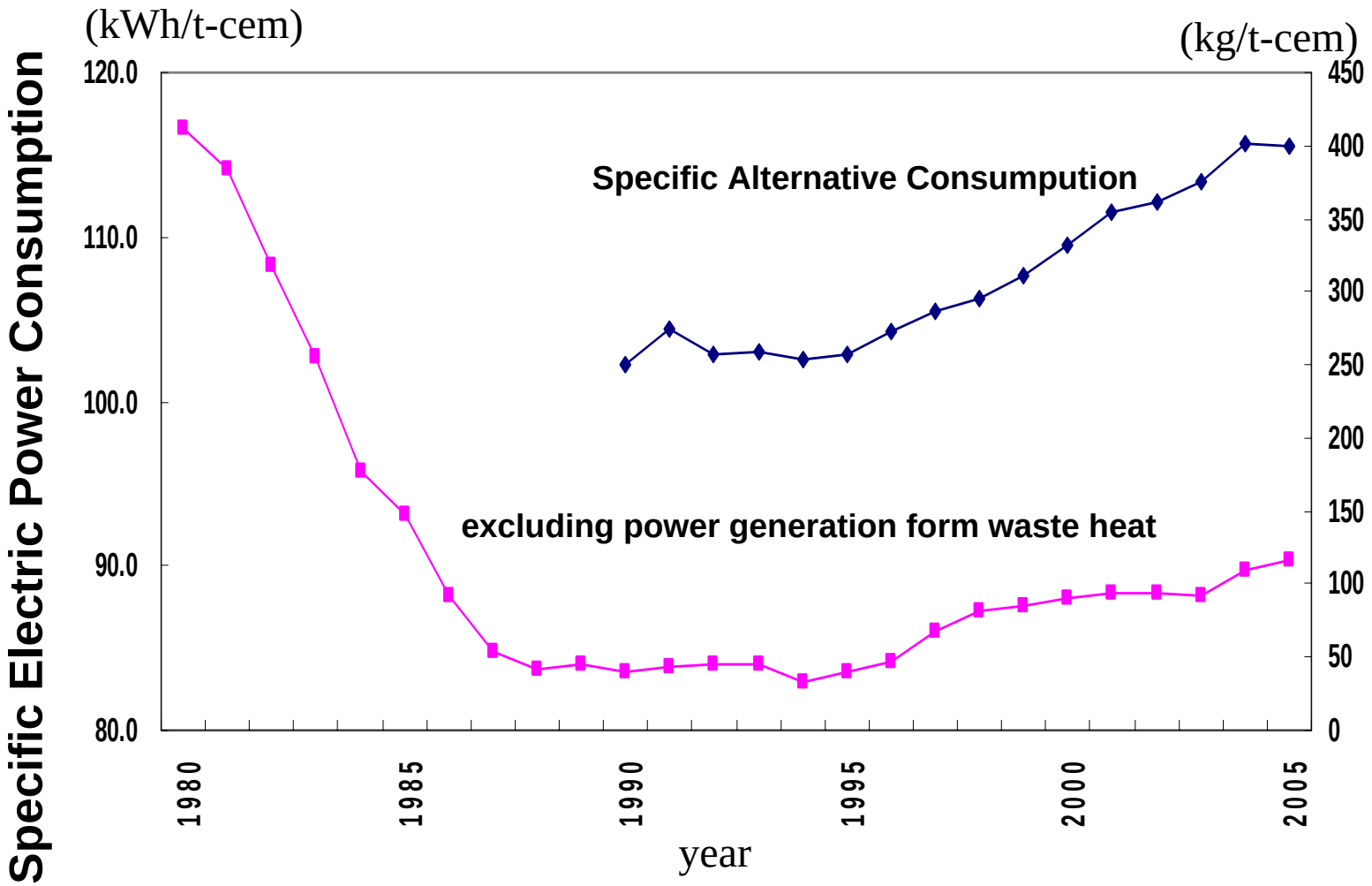


Specific Heat Consumption by kiln type

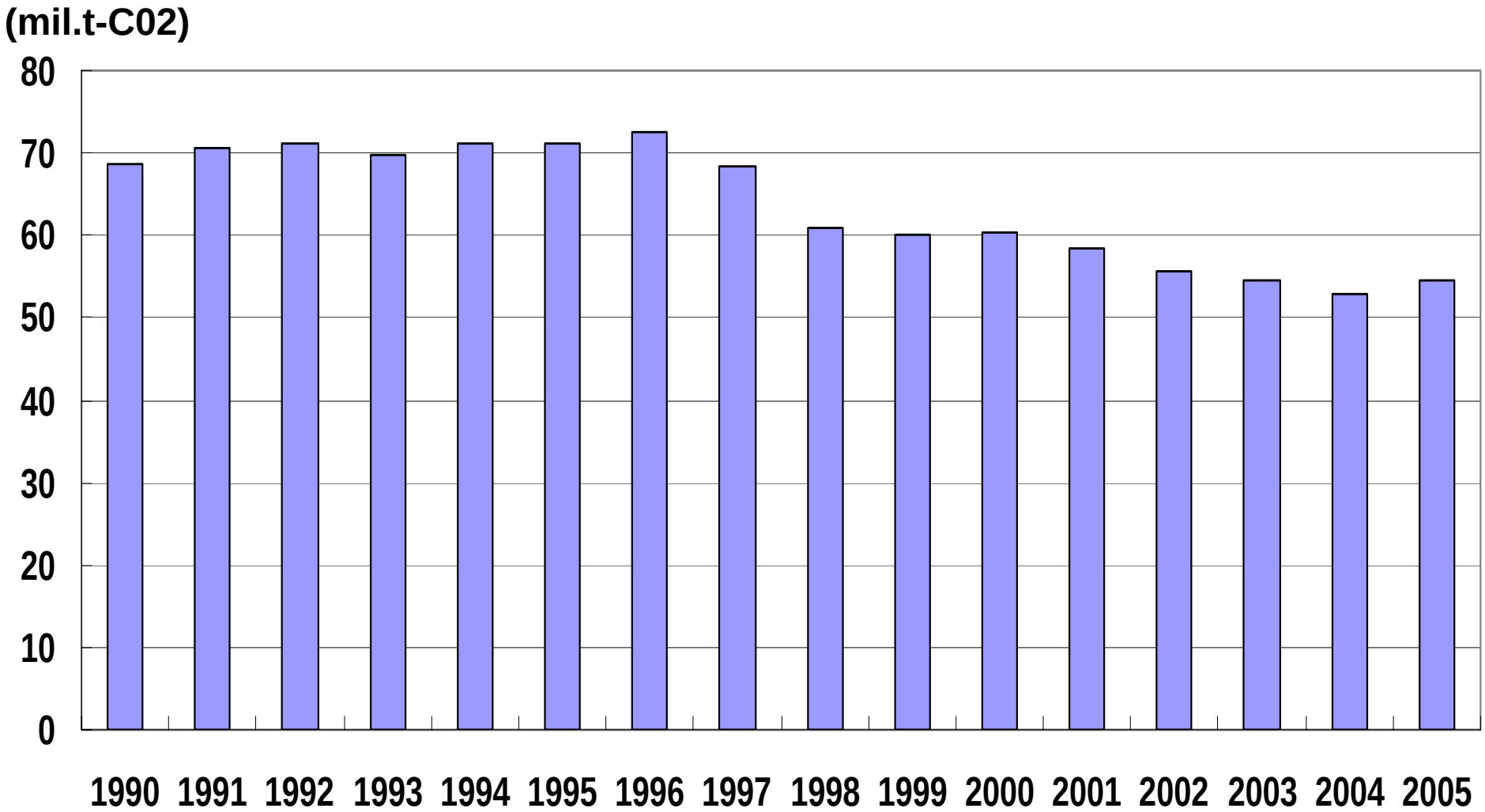
(Total heat of the clinker burning process)



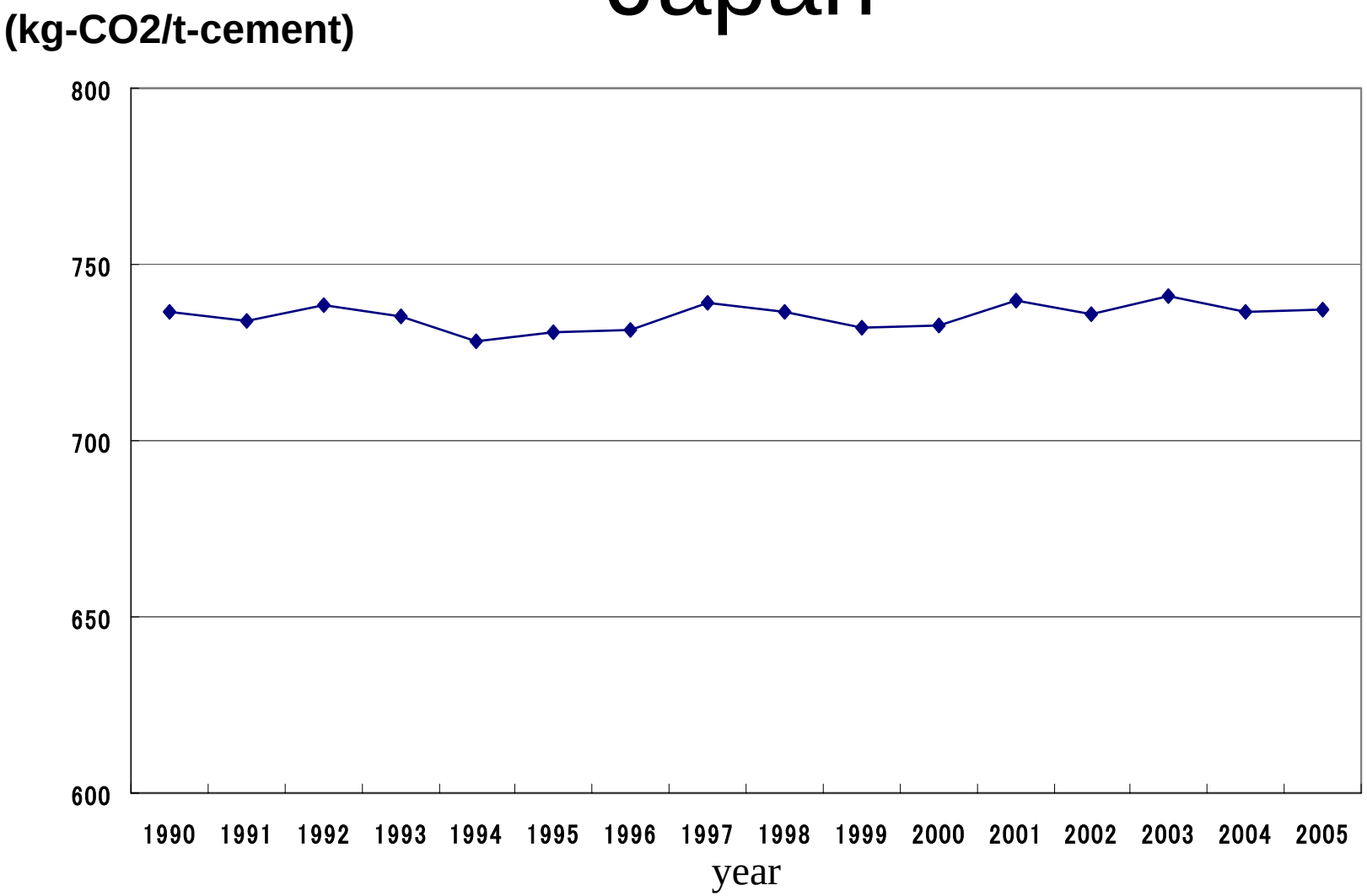
Specific Electric Power Consumption And Specific Alternative Consumption in Japan



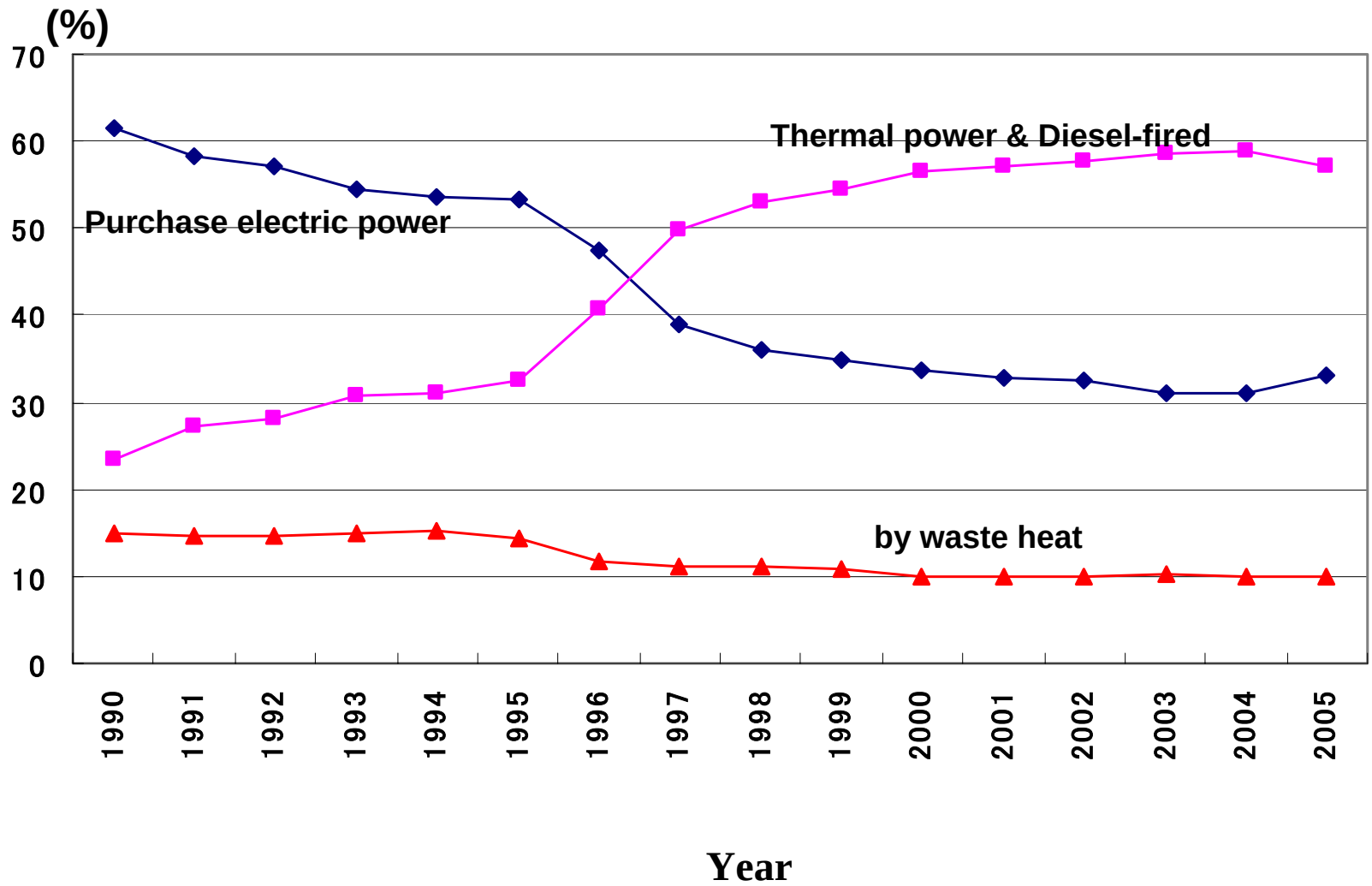
CO2 emissions in Japan Cement Industry



Specific CO2 emissions in Japan



Transition of power source rate in cement plant (Japan)

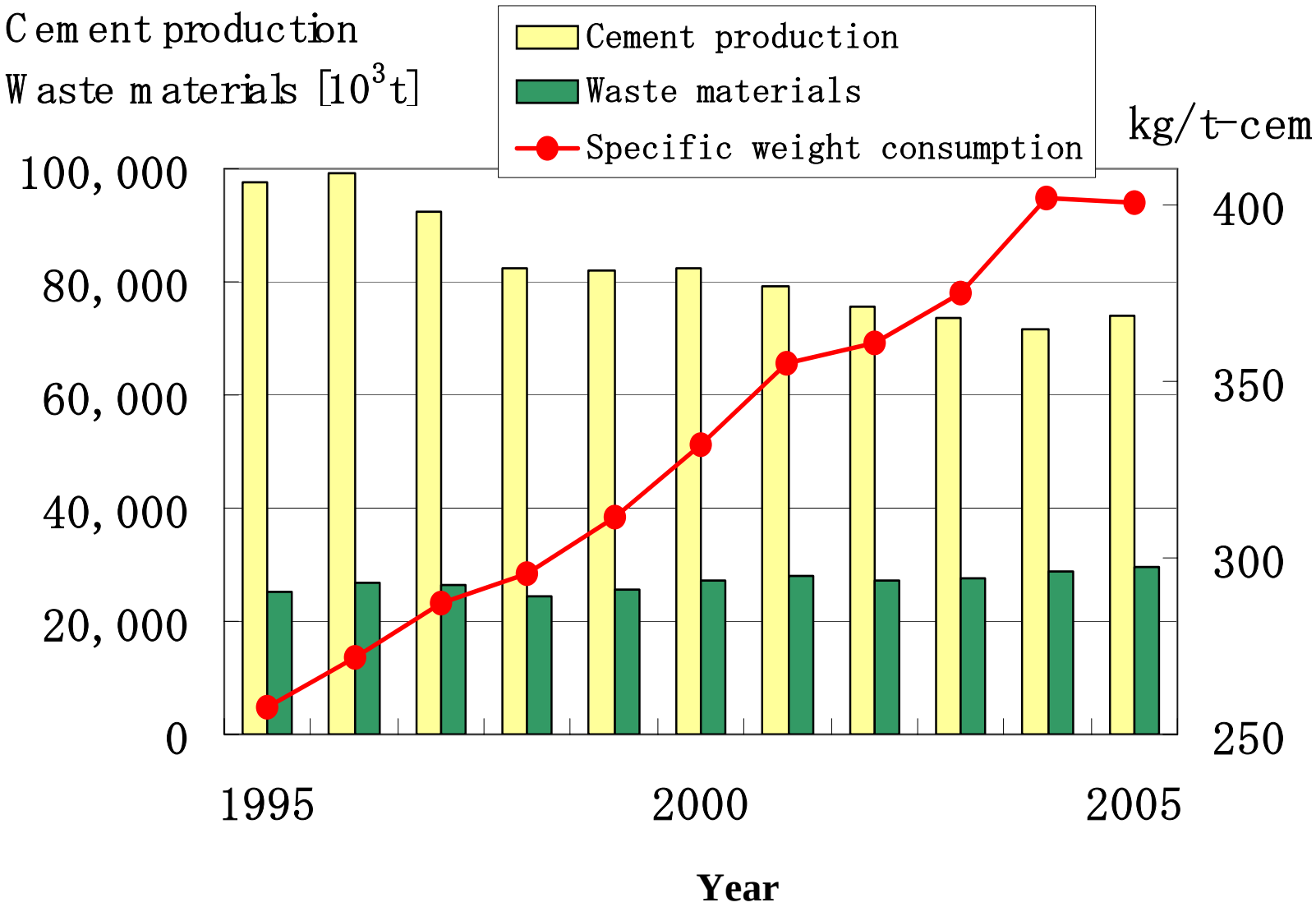


Key Technology of CO2 emmission reduction

1) Continue the installation of energy-conserving equipment and the development of clean technologies

2) Use of alternative fuels such as waste tires and waste plastics

Transition of Unit Consumption of Wastes and By-product

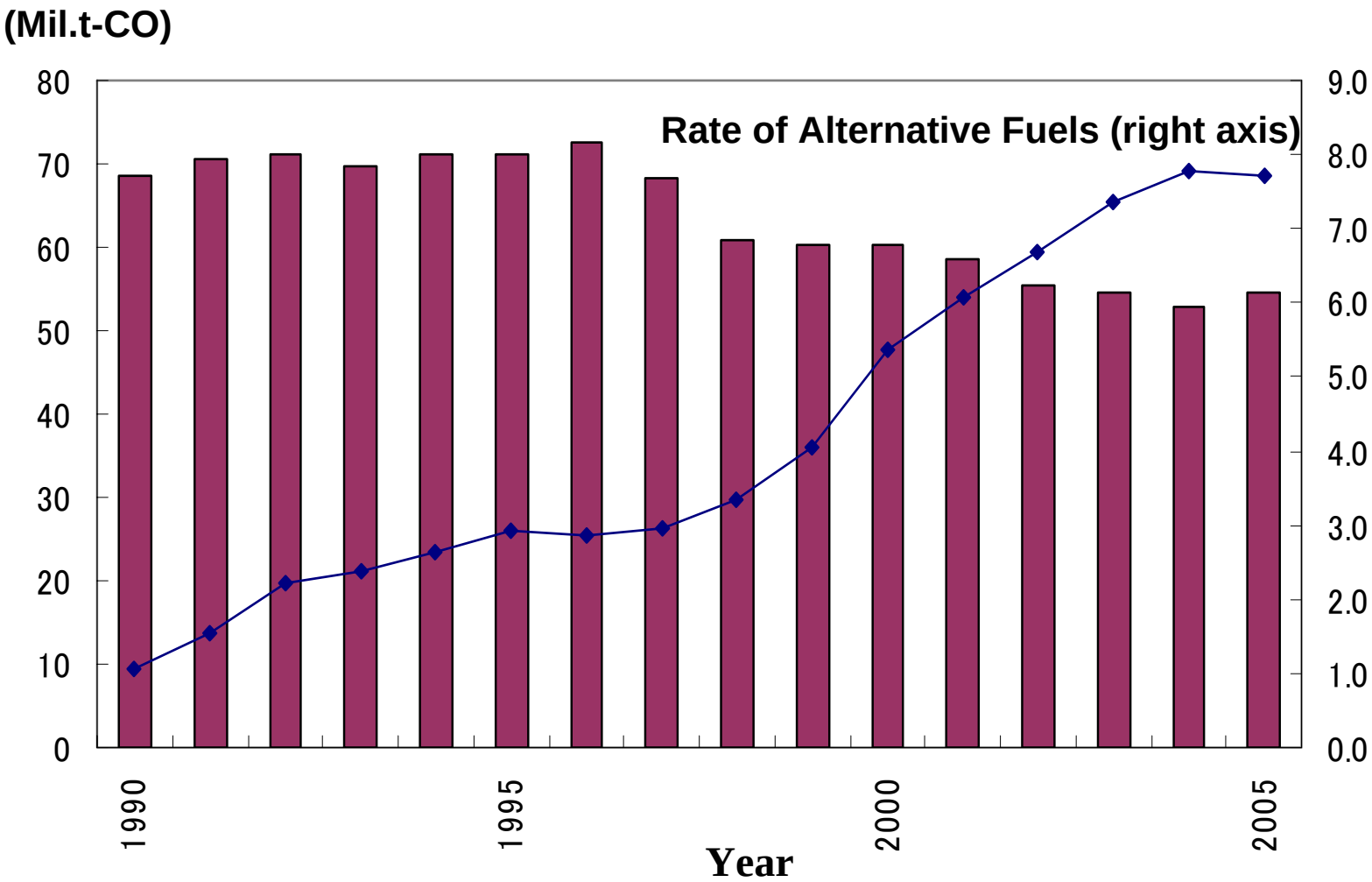


Alternative Fuels and Raw Materials (AFR) in Japanese Cement Industry

(Unit:thousand tons)

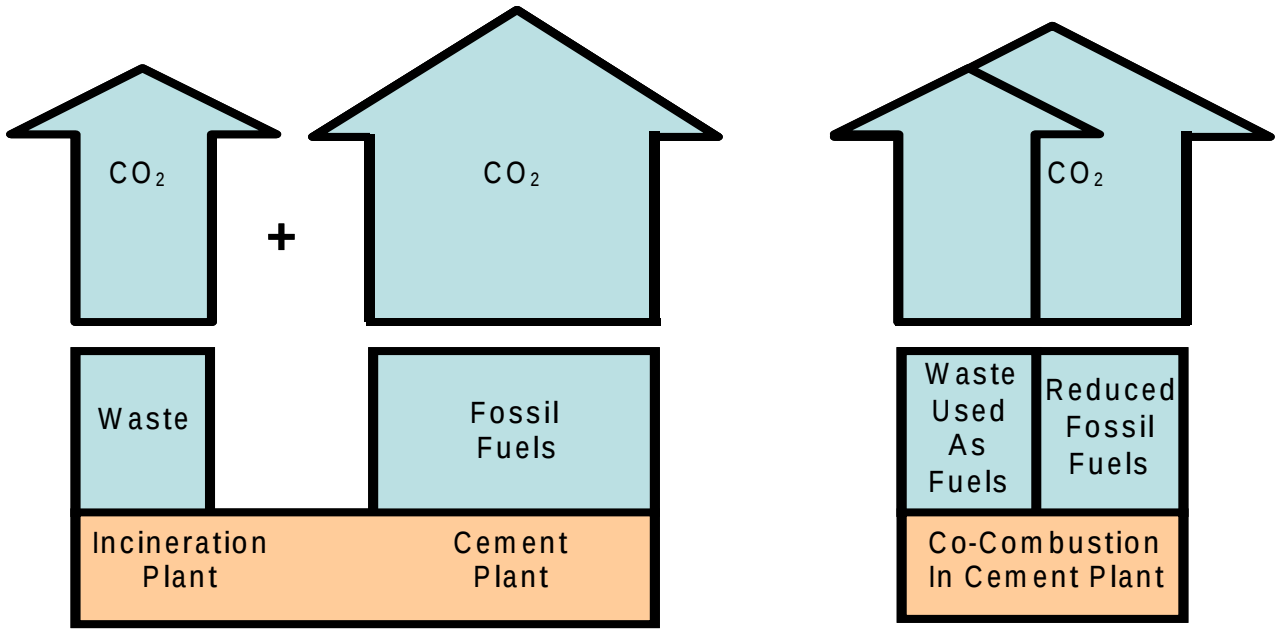
Item	1999	2000	2001	2002	2003	2004	2005
Blast furnace slag	11,449	12,162	11,915	10,474	10,173	9,231	9,214
Coal ashes	4,551	5,145	5,822	6,320	6,429	6,937	7,185
By-product Gypsum	2,567	2,463	2,568	2,556	2,530	2,649	2,707
Waste tires	28	323	284	253	230	221	194
Waste oil	338	359	353	352	411	450	447
Waste plastics	58	102	171	211	255	283	302
Wood chips	0	2	20	149	271	305	340
Others	6,423	6,923	7,077	7,023	7,438	8,704	9204
Total	**25,584**	**27,359**	**28,061**	**27,238**	**27,564**	**28,780**	**29,593**

Transition of CO2 emissions from energy and rate of Alternative Fuels (AF)



CO_2 Impacts of AF Use

Source: CEMBUREAU, Alternative Fuels in Cement Manufacture, 1997.



CO_2 from waste incineration in Japan : 25 million tons.

Thank you