

**Changes in Key Measures of Carbon Intensity in Manufacturing, 1991-1998**

Industry Group	SIC <sup>a</sup> Code	1991			1998			Percent Change, 1991-1998		
		E/Y	C/E	C/Y	E/Y	C/E	C/Y	E/Y	C/E	C/Y
Petroleum .....	29	36	45.26	1,647.2	42	42.32	1,776.3	15.3	-6.5	7.8
Chemicals .....	28	17	45.84	771.3	18	44.25	800.0	7.4	-3.5	3.7
Metals .....	33	22	68.17	1,484.4	19	68.53	1,301.3	-12.8	0.5	-12.3
Paper .....	26	20	37.40	731.9	20	36.32	709.6	-0.2	-2.9	-3.0
Food .....	20	3	59.05	176.9	3	57.37	181.6	5.7	-2.9	2.6
Glass .....	32	16	67.76	1,104.7	14	66.57	913.7	-15.8	-1.8	-17.3
Other Manufacturing .....	2	55.20	131.7		2	54.81	114.7	-12.3	-0.7	-12.9
<b>Total .....</b>	<b>8</b>	<b>50.91</b>	<b>408.8</b>		<b>7</b>	<b>49.42</b>	<b>356.0</b>	<b>-10.3</b>	<b>-2.9</b>	<b>-12.9</b>
<b>Total Without Structural Shift ..</b>	<b>8</b>	<b>—</b>	<b>—</b>		<b>8</b>	<b>—</b>	<b>—</b>	<b>0.7</b>	<b>—</b>	<b>—</b>

<sup>a</sup>Standard Industrial Classification.

Notes: E/Y = energy consumed (thousand Btu) per constant 1996 dollar value of shipments. C/E = million metric tons CO<sub>2</sub> emitted per quadrillion Btu of energy consumed. C/Y = metric tons CO<sub>2</sub> emitted per million chained 1996 dollars value of shipments.

Sources: Energy Information Administration, Form EIA-846, "Manufacturing Energy Consumption Survey," and Form EIA-810, "Monthly Refinery Report" (1998).

<sup>b</sup>Carbon dioxide emission factors include indirect emissions from electricity consumed in the manufacturing process. These emission factors are based on a national average for electricity and are assumed for the purposes of this analysis to be uniform across industries.

<sup>c</sup>There are several approaches, based on index number theory, that can be used to decompose aggregate values and trends. The values reported here are based on a discrete approximation of the Divisia integral index. Statistically, the positive change for energy intensity of 0.7 percent is not significantly different from zero.