

**Table 21. Residential Sector Supplement Table (1 of 2)**

| Equipment Stock Data                        | 1999          | 2000          | 2001          | 2002          | 2003          | 2004          | 2005          | 2006          | 2007          | 2008          | 2009          | 2010          | 2011          | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          | 2019          | 2020          | 1999-2020   |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| Equipment Stock (million units)             |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Main Space Heaters</b>                   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Electric Heat Pumps                         | 9.76          | 9.99          | 10.25         | 10.48         | 10.71         | 10.93         | 11.08         | 11.21         | 11.33         | 11.45         | 11.57         | 11.69         | 11.83         | 11.98         | 12.14         | 12.31         | 12.49         | 12.66         | 12.83         | 13.00         | 13.17         | 13.34         | 1.5%        |
| Electric Other                              | 20.13         | 20.24         | 20.38         | 20.52         | 20.65         | 20.79         | 20.89         | 20.98         | 21.07         | 21.16         | 21.25         | 21.34         | 21.45         | 21.57         | 21.69         | 21.81         | 21.93         | 22.05         | 22.16         | 22.28         | 22.39         | 22.50         | 0.5%        |
| Natural Gas Heat Pumps                      | 0.01          | 0.02          | 0.02          | 0.03          | 0.03          | 0.04          | 0.04          | 0.05          | 0.05          | 0.05          | 0.06          | 0.06          | 0.07          | 0.07          | 0.07          | 0.08          | 0.08          | 0.09          | 0.09          | 0.10          | 0.10          | 0.10          | 11.4%       |
| Natural Gas Other                           | 55.11         | 55.93         | 56.72         | 57.54         | 58.40         | 59.27         | 60.24         | 61.16         | 62.07         | 62.97         | 63.85         | 64.73         | 65.68         | 66.66         | 67.63         | 68.60         | 69.57         | 70.55         | 71.53         | 72.50         | 73.45         | 74.38         | 1.4%        |
| Distillate                                  | 9.46          | 9.43          | 9.42          | 9.41          | 9.41          | 9.40          | 9.38          | 9.36          | 9.34          | 9.32          | 9.30          | 9.27          | 9.25          | 9.22          | 9.20          | 9.17          | 9.15          | 9.12          | 9.09          | 9.06          | 9.02          | 8.99          | -0.2%       |
| Liquefied Petroleum Gas                     | 4.87          | 4.89          | 4.90          | 4.93          | 4.95          | 4.98          | 4.99          | 5.00          | 5.00          | 5.01          | 5.01          | 5.01          | 5.01          | 5.02          | 5.03          | 5.04          | 5.05          | 5.06          | 5.06          | 5.07          | 5.08          | 5.09          | 0.2%        |
| Kerosene                                    | 0.96          | 0.95          | 0.93          | 0.92          | 0.90          | 0.89          | 0.88          | 0.86          | 0.85          | 0.84          | 0.83          | 0.82          | 0.80          | 0.79          | 0.78          | 0.77          | 0.76          | 0.75          | 0.74          | 0.74          | 0.73          | 0.72          | -1.4%       |
| Wood Stoves                                 | 2.19          | 2.18          | 2.17          | 2.16          | 2.16          | 2.16          | 2.16          | 2.15          | 2.15          | 2.14          | 2.14          | 2.14          | 2.14          | 2.14          | 2.14          | 2.14          | 2.14          | 2.14          | 2.15          | 2.15          | 2.15          | 2.15          | -0.1%       |
| Geothermal Heat Pumps                       | 0.42          | 0.46          | 0.51          | 0.55          | 0.59          | 0.63          | 0.67          | 0.70          | 0.73          | 0.76          | 0.80          | 0.83          | 0.86          | 0.89          | 0.92          | 0.95          | 0.98          | 1.01          | 1.04          | 1.07          | 1.10          | 1.13          | 4.8%        |
| <b>Total</b>                                | <b>102.90</b> | <b>104.09</b> | <b>105.30</b> | <b>106.54</b> | <b>107.81</b> | <b>109.10</b> | <b>110.32</b> | <b>111.47</b> | <b>112.60</b> | <b>113.71</b> | <b>114.79</b> | <b>115.89</b> | <b>117.09</b> | <b>118.34</b> | <b>119.61</b> | <b>120.88</b> | <b>122.15</b> | <b>123.43</b> | <b>124.70</b> | <b>125.95</b> | <b>127.19</b> | <b>128.40</b> | <b>1.1%</b> |
|   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Space Cooling (million units)</b>        |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Electric Heat Pumps                         | 9.76          | 9.99          | 10.25         | 10.48         | 10.71         | 10.93         | 11.08         | 11.21         | 11.33         | 11.45         | 11.57         | 11.69         | 11.83         | 11.98         | 12.14         | 12.31         | 12.49         | 12.66         | 12.83         | 13.00         | 13.17         | 13.34         | 1.5%        |
| Natural Gas Heat Pumps                      | 0.01          | 0.02          | 0.02          | 0.03          | 0.03          | 0.04          | 0.04          | 0.05          | 0.05          | 0.05          | 0.06          | 0.06          | 0.07          | 0.07          | 0.07          | 0.08          | 0.08          | 0.09          | 0.09          | 0.10          | 0.10          | 0.10          | 11.4%       |
| Geothermal Heat Pumps                       | 0.42          | 0.46          | 0.51          | 0.55          | 0.59          | 0.63          | 0.67          | 0.70          | 0.73          | 0.76          | 0.80          | 0.83          | 0.86          | 0.89          | 0.92          | 0.95          | 0.98          | 1.01          | 1.04          | 1.07          | 1.10          | 1.13          | 4.8%        |
| Central Air Conditioners                    | 41.18         | 42.13         | 43.06         | 44.03         | 45.01         | 46.00         | 47.01         | 47.98         | 48.93         | 49.87         | 50.79         | 51.72         | 52.70         | 53.71         | 54.72         | 55.73         | 56.74         | 57.75         | 58.75         | 59.73         | 60.70         | 61.65         | 1.9%        |
| Room Air Conditioners                       | 37.04         | 37.03         | 37.03         | 37.04         | 37.07         | 37.09         | 37.11         | 37.13         | 37.14         | 37.16         | 37.17         | 37.19         | 37.23         | 37.27         | 37.33         | 37.38         | 37.44         | 37.49         | 37.54         | 37.59         | 37.64         | 37.69         | 0.1%        |
| <b>Total</b>                                | <b>88.41</b>  | <b>89.63</b>  | <b>90.87</b>  | <b>92.13</b>  | <b>93.41</b>  | <b>94.70</b>  | <b>95.92</b>  | <b>97.07</b>  | <b>98.19</b>  | <b>99.30</b>  | <b>100.39</b> | <b>101.48</b> | <b>102.68</b> | <b>103.92</b> | <b>105.19</b> | <b>106.46</b> | <b>107.73</b> | <b>108.99</b> | <b>110.25</b> | <b>111.50</b> | <b>112.72</b> | <b>113.91</b> | <b>1.2%</b> |
|   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Water Heaters (million units)</b>        |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Electric                                    | 40.44         | 40.85         | 41.32         | 41.77         | 42.23         | 42.68         | 43.00         | 43.30         | 43.60         | 43.89         | 44.17         | 44.46         | 44.79         | 45.13         | 45.49         | 45.84         | 46.17         | 46.50         | 46.83         | 47.15         | 47.48         | 47.80         | 0.8%        |
| Natural Gas                                 | 54.20         | 54.98         | 55.73         | 56.51         | 57.32         | 58.14         | 59.06         | 59.92         | 60.77         | 61.61         | 62.44         | 63.27         | 64.17         | 65.10         | 66.03         | 66.96         | 67.92         | 68.88         | 69.84         | 70.78         | 71.70         | 72.61         | 1.4%        |
| Distillate                                  | 5.11          | 5.08          | 5.06          | 5.04          | 5.02          | 5.00          | 4.98          | 4.95          | 4.92          | 4.89          | 4.86          | 4.83          | 4.80          | 4.77          | 4.74          | 4.71          | 4.68          | 4.65          | 4.62          | 4.59          | 4.56          | 4.53          | -0.6%       |
| Liquefied Petroleum Gas                     | 3.48          | 3.51          | 3.52          | 3.54          | 3.57          | 3.59          | 3.60          | 3.61          | 3.61          | 3.62          | 3.62          | 3.62          | 3.62          | 3.62          | 3.64          | 3.65          | 3.66          | 3.68          | 3.69          | 3.71          | 3.72          | 3.73          | 0.3%        |
| Solar Thermal                               | 0.36          | 0.35          | 0.35          | 0.35          | 0.35          | 0.35          | 0.35          | 0.34          | 0.34          | 0.34          | 0.34          | 0.34          | 0.34          | 0.34          | 0.33          | 0.33          | 0.33          | 0.33          | 0.33          | 0.33          | 0.33          | 0.32          | -0.4%       |
| <b>Total</b>                                | <b>103.59</b> | <b>104.77</b> | <b>105.98</b> | <b>107.21</b> | <b>108.48</b> | <b>109.76</b> | <b>110.98</b> | <b>112.13</b> | <b>113.24</b> | <b>114.35</b> | <b>115.43</b> | <b>116.52</b> | <b>117.72</b> | <b>118.96</b> | <b>120.23</b> | <b>121.50</b> | <b>122.77</b> | <b>124.04</b> | <b>125.30</b> | <b>126.55</b> | <b>127.79</b> | <b>128.99</b> | <b>1.0%</b> |
|   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Cooking Equipment (million units) 1/</b> |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Electric                                    | 63.85         | 64.62         | 65.44         | 66.27         | 67.10         | 67.93         | 68.66         | 69.35         | 70.02         | 70.69         | 71.34         | 71.99         | 72.71         | 73.46         | 74.20         | 74.95         | 75.68         | 76.44         | 77.21         | 77.99         | 78.79         | 79.57         | 1.1%        |
| Natural Gas                                 | 34.61         | 35.03         | 35.42         | 35.83         | 36.27         | 36.73         | 37.22         | 37.69         | 38.16         | 38.61         | 39.06         | 39.52         | 40.02         | 40.54         | 41.07         | 41.61         | 42.15         | 42.67         | 43.17         | 43.64         | 44.09         | 44.50         | 1.2%        |
| Liquefied Petroleum Gas                     | 4.39          | 4.39          | 4.38          | 4.38          | 4.39          | 4.39          | 4.38          | 4.37          | 4.36          | 4.34          | 4.33          | 4.31          | 4.29          | 4.28          | 4.27          | 4.26          | 4.25          | 4.25          | 4.25          | 4.25          | 4.25          | 4.26          | -0.1%       |
| <b>Total</b>                                | <b>102.85</b> | <b>104.04</b> | <b>105.25</b> | <b>106.49</b> | <b>107.76</b> | <b>109.04</b> | <b>110.26</b> | <b>111.42</b> | <b>112.54</b> | <b>113.65</b> | <b>114.73</b> | <b>115.82</b> | <b>117.03</b> | <b>118.28</b> | <b>119.54</b> | <b>120.82</b> | <b>122.09</b> | <b>123.36</b> | <b>124.63</b> | <b>125.89</b> | <b>127.12</b> | <b>128.33</b> | <b>1.1%</b> |
|   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Clothes Dryers (million units)</b>       |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Electric                                    | 58.28         | 59.46         | 60.63         | 61.80         | 62.98         | 64.15         | 65.28         | 66.34         | 67.38         | 68.40         | 69.39         | 70.38         | 71.43         | 72.51         | 73.58         | 74.66         | 75.73         | 76.80         | 77.86         | 78.91         | 79.95         | 80.96         | 1.6%        |
| Natural Gas                                 | 16.26         | 16.67         | 17.09         | 17.51         | 17.94         | 18.37         | 18.80         | 19.22         | 19.64         | 20.05         | 20.46         | 20.87         | 21.29         | 21.72         | 22.15         | 22.58         | 23.02         | 23.45         | 23.88         | 24.30         | 24.72         | 25.14         | 2.1%        |
| <b>Total</b>                                | <b>74.54</b>  | <b>76.13</b>  | <b>77.72</b>  | <b>79.31</b>  | <b>80.92</b>  | <b>82.53</b>  | <b>84.08</b>  | <b>85.57</b>  | <b>87.02</b>  | <b>88.45</b>  | <b>89.85</b>  | <b>91.25</b>  | <b>92.72</b>  | <b>94.23</b>  | <b>95.74</b>  | <b>97.25</b>  | <b>98.75</b>  | <b>100.25</b> | <b>101.74</b> | <b>103.21</b> | <b>104.67</b> | <b>106.10</b> | <b>1.7%</b> |
|   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| <b>Other Appliances (million units)</b>     |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Refrigerators                               | 117.77        | 119.01        | 120.27        | 121.56        | 122.89        | 124.23        | 125.50        | 126.69        | 127.86        | 129.01        | 130.14        | 131.27        | 132.52        | 133.82        | 135.14        | 136.46        | 137.78        | 139.11        | 140.43        | 141.74        | 143.03        | 144.29        | 1.0%        |
| Freezers                                    | 33.72         | 33.71         | 33.69         | 33.69         | 33.70         | 33.71         | 33.72         | 33.72         | 33.72         | 33.71         | 33.69         | 33.70         | 33.78         | 33.89         | 34.03         | 34.20         | 34.39         | 34.59         | 34.82         | 35.06         | 35.31         | 35.57         | 0.3%        |

**Table 21. Residential Sector Supplement Table (2 of 2)**

| Equipment Stock Data                                | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 1999-2020 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| Stock Average Equipment Efficiency                  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Main Space Heaters</b>                           |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Electric Heat Pumps (HSPF)                          | 7.02   | 7.09   | 7.15   | 7.19   | 7.21   | 7.23   | 7.24   | 7.25   | 7.25   | 7.25   | 7.25   | 7.26   | 7.27   | 7.28   | 7.29   | 7.31   | 7.34   | 7.36   | 7.39   | 7.41   | 7.43   | 7.44   | 0.3%      |
| Natural Gas Heat Pumps (GCOP)                       | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.41   | 1.42   | 1.43   | 1.44   | 1.45   | 1.45   | 0.2%      |
| Geothermal Heat Pumps (COP)                         | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.40   | 3.41   | 3.42   | 3.43   | 3.44   | 3.45   | 3.46   | 0.1%      |
| Natural Gas Furnace (AFUE)                          | 0.75   | 0.76   | 0.77   | 0.77   | 0.78   | 0.79   | 0.79   | 0.80   | 0.80   | 0.81   | 0.81   | 0.81   | 0.82   | 0.82   | 0.82   | 0.82   | 0.83   | 0.83   | 0.83   | 0.83   | 0.83   | 0.83   | 0.5%      |
| Distillate Furnace (AFUE)                           | 0.78   | 0.79   | 0.79   | 0.80   | 0.80   | 0.81   | 0.81   | 0.81   | 0.81   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.82   | 0.2%      |
|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Space Cooling</b>                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Electric Heat Pumps (SEER)                          | 10.41  | 10.55  | 10.67  | 10.77  | 10.84  | 10.89  | 10.95  | 10.99  | 11.03  | 11.05  | 11.08  | 11.11  | 11.14  | 11.17  | 11.20  | 11.23  | 11.29  | 11.34  | 11.38  | 11.42  | 11.45  | 11.49  | 0.5%      |
| Natural Gas Heat Pumps (GCOP)                       | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.70   | 0.0%      |
| Geothermal Heat Pumps (EER)                         | 13.50  | 13.50  | 13.50  | 13.50  | 13.50  | 13.50  | 13.91  | 14.16  | 14.45  | 14.75  | 15.08  | 15.44  | 15.81  | 16.20  | 16.61  | 17.00  | 16.89  | 16.75  | 16.57  | 16.37  | 16.15  | 15.89  | 0.8%      |
| Central Air Conditioners (SEER)                     | 10.21  | 10.32  | 10.43  | 10.51  | 10.58  | 10.64  | 10.71  | 10.77  | 10.81  | 10.85  | 10.89  | 10.93  | 10.96  | 10.99  | 11.02  | 11.04  | 11.10  | 11.15  | 11.20  | 11.25  | 11.29  | 11.33  | 0.5%      |
| Room Air Conditioners (EER)                         | 8.62   | 8.70   | 8.81   | 8.92   | 9.03   | 9.12   | 9.21   | 9.29   | 9.36   | 9.42   | 9.47   | 9.52   | 9.56   | 9.61   | 9.66   | 9.69   | 9.73   | 9.75   | 9.78   | 9.79   | 9.80   | 9.80   | 0.6%      |
|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Water Heaters</b>                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Electric (EF)                                       | 0.87   | 0.87   | 0.87   | 0.87   | 0.87   | 0.87   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.88   | 0.89   | 0.1%      |
| Natural Gas (EF)                                    | 0.54   | 0.54   | 0.55   | 0.55   | 0.55   | 0.55   | 0.56   | 0.56   | 0.56   | 0.56   | 0.56   | 0.56   | 0.56   | 0.56   | 0.56   | 0.57   | 0.57   | 0.57   | 0.57   | 0.57   | 0.57   | 0.57   | 0.3%      |
| Distillate (EF)                                     | 0.53   | 0.53   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.54   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.53   | 0.0%      |
| Liquefied Petroleum Gas (EF)                        | 0.54   | 0.55   | 0.55   | 0.55   | 0.56   | 0.56   | 0.56   | 0.57   | 0.57   | 0.57   | 0.57   | 0.58   | 0.58   | 0.58   | 0.58   | 0.58   | 0.59   | 0.59   | 0.59   | 0.59   | 0.60   | 0.60   | 0.5%      |
|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Other Appliances (kilowatthours per year) 2/</b> |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Refrigerators                                       | 907.65 | 880.84 | 857.34 | 822.10 | 789.18 | 758.84 | 730.96 | 705.39 | 681.55 | 659.13 | 637.88 | 618.51 | 600.99 | 585.20 | 571.25 | 558.95 | 548.28 | 539.07 | 531.24 | 524.56 | 518.99 | 514.08 | -2.7%     |
| Freezers  | 653.95 | 631.19 | 609.74 | 586.52 | 564.84 | 544.83 | 527.59 | 513.68 | 502.18 | 492.20 | 483.65 | 476.05 | 469.55 | 464.01 | 458.98 | 454.72 | 451.17 | 448.28 | 445.97 | 444.17 | 442.74 | 441.69 | -1.9%     |
|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Building Shell Efficiency Index</b>              |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Space Heating</b>                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Pre-1998 Homes                                      | 0.95   | 0.94   | 0.94   | 0.93   | 0.93   | 0.93   | 0.92   | 0.92   | 0.92   | 0.92   | 0.92   | 0.91   | 0.91   | 0.91   | 0.90   | 0.90   | 0.90   | 0.90   | 0.90   | 0.89   | 0.89   | 0.89   | -0.3%     |
| New Construction                                    | 0.80   | 0.81   | 0.81   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.80   | 0.79   | 0.79   | 0.79   | -0.1%     |
| All Homes   | 0.94   | 0.93   | 0.93   | 0.92   | 0.92   | 0.91   | 0.91   | 0.90   | 0.90   | 0.90   | 0.89   | 0.89   | 0.89   | 0.88   | 0.88   | 0.88   | 0.87   | 0.87   | 0.87   | 0.86   | 0.86   | 0.86   | -0.4%     |
|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Space Cooling</b>                                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Pre-1998 Homes                                      | 0.95   | 0.95   | 0.95   | 0.95   | 0.95   | 0.95   | 0.95   | 0.95   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.93   | 0.93   | 0.93   | -0.1%     |
| New Construction                                    | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.91   | 0.90   | 0.90   | 0.90   | 0.0%      |
| All Homes   | 0.95   | 0.95   | 0.95   | 0.95   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.94   | 0.93   | 0.93   | 0.93   | 0.93   | 0.93   | 0.93   | 0.93   | 0.93   | 0.93   | 0.92   | 0.92   | -0.1%     |

1/ Does not include microwave ovens or outdoor grills.  
 2/ Kilowatthours per year to run the appliance under certain test conditions as specified by the Department of Energy.  
 HSPF = Heating Seasonal Performance Factor: The total heating output of a heat pump in Btu during its normal annual usage period for heating divided by total electric input in watt-hours during the same period.  
 COP = Coefficient of Performance: Energy efficiency rating measure determined, under specific testing conditions, by dividing the energy output by the energy input.  
 GCOP = Gas Coefficient of Performance: Energy efficiency rating measure determined, under specific testing conditions, by dividing the energy output by the energy input.  
 AFUE = Annual Fuel Utilization Efficiency: Efficiency rating based on average usage, including on and off cycling, as set out in the standardized Department of Energy test procedures.  
 SEER = Seasonal Energy Efficiency Ratio: The total cooling of a central unitary air conditioner or a unitary heat pump in Btu during its normal annual usage period for cooling divided by the total electric energy input in watt-hours during the same period.  
 EER = Energy Efficiency Ratio: A ratio calculated by dividing the cooling capacity in Btu per hour by the power input in watts at any given set of rating conditions, expressed in Btu per hour per watt.  
 EF = Efficiency Factor: Efficiency (measured in Btu out / Btu in) of water heaters under certain test conditions specified by the Department of Energy.  
 Btu = British thermal unit.  
 N/A = Not applicable.  
 Note: Totals may not equal sum of components due to independent rounding.  
 Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 22. Commercial Sector Supplement Table (1 of 2)**

| Indicators   | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 1999-2020 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| Commercial Building Delivered                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Energy Consumption (quadrillion Btu) 1/              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Assembly   | 0.52  | 0.51  | 0.54  | 0.55  | 0.57  | 0.57  | 0.58  | 0.59  | 0.59  | 0.60  | 0.60  | 0.61  | 0.62  | 0.62  | 0.63  | 0.63  | 0.64  | 0.64  | 0.64  | 0.65  | 0.65  | 0.65  | 1.1%      |
| Education  | 0.69  | 0.68  | 0.72  | 0.74  | 0.76  | 0.77  | 0.79  | 0.80  | 0.81  | 0.82  | 0.83  | 0.84  | 0.86  | 0.87  | 0.88  | 0.89  | 0.89  | 0.90  | 0.91  | 0.91  | 0.91  | 0.92  | 1.3%      |
| Food Sales   | 0.15  | 0.15  | 0.15  | 0.16  | 0.16  | 0.16  | 0.16  | 0.17  | 0.17  | 0.17  | 0.17  | 0.18  | 0.18  | 0.18  | 0.18  | 0.18  | 0.18  | 0.19  | 0.19  | 0.19  | 0.19  | 0.19  | 1.2%      |
| Food Service   | 0.38  | 0.38  | 0.38  | 0.40  | 0.40  | 0.41  | 0.42  | 0.42  | 0.43  | 0.44  | 0.44  | 0.45  | 0.46  | 0.46  | 0.47  | 0.47  | 0.48  | 0.48  | 0.48  | 0.49  | 0.49  | 0.49  | 1.3%      |
| Health Care  | 0.53  | 0.53  | 0.55  | 0.58  | 0.60  | 0.61  | 0.62  | 0.64  | 0.65  | 0.66  | 0.68  | 0.69  | 0.70  | 0.71  | 0.72  | 0.74  | 0.75  | 0.76  | 0.76  | 0.77  | 0.78  | 0.79  | 1.9%      |
| Lodging  | 0.52  | 0.53  | 0.54  | 0.56  | 0.58  | 0.59  | 0.60  | 0.61  | 0.63  | 0.64  | 0.65  | 0.66  | 0.67  | 0.68  | 0.70  | 0.71  | 0.72  | 0.73  | 0.74  | 0.74  | 0.75  | 0.75  | 1.7%      |
| Office - Large                                       | 0.67  | 0.68  | 0.71  | 0.73  | 0.75  | 0.77  | 0.79  | 0.80  | 0.82  | 0.84  | 0.86  | 0.87  | 0.89  | 0.90  | 0.92  | 0.93  | 0.94  | 0.95  | 0.97  | 0.98  | 0.99  | 0.99  | 1.9%      |
| Office - Small                                       | 0.53  | 0.53  | 0.56  | 0.58  | 0.60  | 0.61  | 0.63  | 0.64  | 0.66  | 0.67  | 0.69  | 0.70  | 0.71  | 0.73  | 0.74  | 0.75  | 0.75  | 0.76  | 0.77  | 0.77  | 0.78  | 0.78  | 1.9%      |
| Mercantile/Service                                   | 1.10  | 1.11  | 1.17  | 1.21  | 1.24  | 1.27  | 1.29  | 1.31  | 1.33  | 1.35  | 1.37  | 1.39  | 1.41  | 1.42  | 1.44  | 1.45  | 1.46  | 1.47  | 1.48  | 1.49  | 1.50  | 1.50  | 1.5%      |
| Warehouse  | 0.37  | 0.37  | 0.39  | 0.41  | 0.43  | 0.44  | 0.45  | 0.46  | 0.47  | 0.48  | 0.49  | 0.50  | 0.51  | 0.52  | 0.53  | 0.54  | 0.54  | 0.55  | 0.56  | 0.56  | 0.57  | 0.57  | 2.2%      |
| Other  | 0.45  | 0.46  | 0.48  | 0.50  | 0.52  | 0.54  | 0.55  | 0.57  | 0.58  | 0.60  | 0.61  | 0.62  | 0.64  | 0.65  | 0.67  | 0.68  | 0.69  | 0.70  | 0.71  | 0.72  | 0.73  | 0.74  | 2.4%      |
| Total  | 5.91  | 5.94  | 6.20  | 6.43  | 6.61  | 6.74  | 6.88  | 7.00  | 7.14  | 7.27  | 7.39  | 7.51  | 7.63  | 7.76  | 7.87  | 7.96  | 8.05  | 8.13  | 8.21  | 8.27  | 8.34  | 8.38  | 1.7%      |
| Commercial Building Floorspace (billion square feet) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Assembly   | 7.05  | 7.18  | 7.31  | 7.43  | 7.53  | 7.60  | 7.68  | 7.76  | 7.82  | 7.89  | 7.96  | 8.03  | 8.09  | 8.15  | 8.21  | 8.27  | 8.32  | 8.36  | 8.40  | 8.43  | 8.46  | 8.49  | 0.9%      |
| Education  | 8.28  | 8.46  | 8.68  | 8.91  | 9.13  | 9.32  | 9.49  | 9.66  | 9.83  | 10.00 | 10.17 | 10.34 | 10.51 | 10.68 | 10.82 | 10.95 | 11.07 | 11.17 | 11.25 | 11.33 | 11.41 | 11.47 | 1.6%      |
| Food Sales   | 0.69  | 0.71  | 0.72  | 0.74  | 0.75  | 0.76  | 0.77  | 0.78  | 0.79  | 0.80  | 0.81  | 0.82  | 0.83  | 0.84  | 0.85  | 0.85  | 0.86  | 0.86  | 0.87  | 0.87  | 0.87  | 0.88  | 1.1%      |
| Food Service   | 1.45  | 1.47  | 1.50  | 1.53  | 1.55  | 1.56  | 1.58  | 1.60  | 1.62  | 1.64  | 1.65  | 1.67  | 1.69  | 1.70  | 1.71  | 1.72  | 1.73  | 1.74  | 1.74  | 1.75  | 1.75  | 1.75  | 0.9%      |
| Health Care  | 1.78  | 1.82  | 1.87  | 1.92  | 1.96  | 1.99  | 2.02  | 2.05  | 2.08  | 2.11  | 2.14  | 2.17  | 2.19  | 2.21  | 2.24  | 2.26  | 2.28  | 2.30  | 2.32  | 2.34  | 2.36  | 2.37  | 1.4%      |
| Lodging  | 3.94  | 4.07  | 4.19  | 4.31  | 4.40  | 4.48  | 4.56  | 4.64  | 4.72  | 4.79  | 4.87  | 4.94  | 5.02  | 5.09  | 5.16  | 5.22  | 5.28  | 5.34  | 5.40  | 5.45  | 5.49  | 5.52  | 1.6%      |
| Office - Large                                       | 5.93  | 6.05  | 6.16  | 6.27  | 6.36  | 6.43  | 6.50  | 6.57  | 6.64  | 6.70  | 6.76  | 6.82  | 6.88  | 6.93  | 6.99  | 7.03  | 7.07  | 7.11  | 7.15  | 7.18  | 7.20  | 7.21  | 0.9%      |
| Office - Small                                       | 5.61  | 5.72  | 5.84  | 5.95  | 6.04  | 6.11  | 6.18  | 6.25  | 6.32  | 6.38  | 6.45  | 6.51  | 6.57  | 6.62  | 6.68  | 6.73  | 6.77  | 6.81  | 6.85  | 6.88  | 6.90  | 6.92  | 1.0%      |
| Mercantile/Service                                   | 13.64 | 13.99 | 14.37 | 14.69 | 14.93 | 15.14 | 15.34 | 15.55 | 15.76 | 15.97 | 16.17 | 16.37 | 16.55 | 16.72 | 16.88 | 17.03 | 17.16 | 17.28 | 17.39 | 17.48 | 17.56 | 17.63 | 1.2%      |
| Warehouse  | 9.22  | 9.48  | 9.76  | 10.03 | 10.26 | 10.45 | 10.63 | 10.80 | 10.97 | 11.12 | 11.25 | 11.38 | 11.50 | 11.61 | 11.71 | 11.80 | 11.89 | 11.96 | 12.03 | 12.09 | 12.14 | 12.18 | 1.3%      |
| Other  | 5.21  | 5.36  | 5.51  | 5.69  | 5.84  | 5.98  | 6.10  | 6.22  | 6.35  | 6.47  | 6.59  | 6.71  | 6.82  | 6.92  | 7.02  | 7.11  | 7.19  | 7.27  | 7.34  | 7.40  | 7.46  | 7.51  | 1.8%      |
| Total  | 62.80 | 64.31 | 65.93 | 67.46 | 68.73 | 69.82 | 70.85 | 71.88 | 72.90 | 73.88 | 74.83 | 75.75 | 76.64 | 77.48 | 78.26 | 78.97 | 79.62 | 80.21 | 80.74 | 81.20 | 81.60 | 81.94 | 1.3%      |
| Stock Average Equipment Efficiency 2/                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Space Heating  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity  | 1.09  | 1.09  | 1.10  | 1.11  | 1.11  | 1.11  | 1.12  | 1.12  | 1.12  | 1.12  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 1.13  | 0.2%      |
| Natural Gas  | 0.75  | 0.75  | 0.76  | 0.76  | 0.76  | 0.77  | 0.77  | 0.77  | 0.77  | 0.78  | 0.78  | 0.78  | 0.78  | 0.78  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.3%      |
| Distillate   | 0.75  | 0.75  | 0.75  | 0.76  | 0.76  | 0.76  | 0.76  | 0.76  | 0.76  | 0.76  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.1%      |
| Space Cooling  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity  | 2.54  | 2.58  | 2.63  | 2.68  | 2.72  | 2.76  | 2.80  | 2.84  | 2.87  | 2.91  | 2.94  | 2.97  | 3.00  | 3.03  | 3.06  | 3.08  | 3.11  | 3.13  | 3.16  | 3.18  | 3.20  | 3.22  | 1.1%      |
| Natural Gas  | 0.91  | 0.94  | 0.96  | 0.98  | 0.99  | 1.00  | 1.02  | 1.04  | 1.05  | 1.07  | 1.08  | 1.10  | 1.11  | 1.12  | 1.13  | 1.14  | 1.15  | 1.16  | 1.16  | 1.17  | 1.18  | 1.19  | 1.3%      |

**Table 22. Commercial Sector Supplement Table (2 of 2)**

| Indicators  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 1999-2020 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| Water Heating   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity   | 0.94  | 0.95  | 0.95  | 0.95  | 0.95  | 0.95  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.96  | 0.97  | 0.97  | 0.97  | 0.97  | 0.97  | 0.1%      |
| Natural Gas   | 0.73  | 0.74  | 0.75  | 0.76  | 0.76  | 0.77  | 0.77  | 0.78  | 0.78  | 0.78  | 0.78  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.79  | 0.80  | 0.80  | 0.80  | 0.80  | 0.80  | 0.4%      |
| Distillate  | 0.75  | 0.75  | 0.75  | 0.75  | 0.76  | 0.76  | 0.76  | 0.76  | 0.76  | 0.76  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.77  | 0.2%      |
| Ventilation (cubic feet per minute per Btu) 3/        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity   | 0.39  | 0.40  | 0.40  | 0.41  | 0.41  | 0.41  | 0.41  | 0.41  | 0.42  | 0.42  | 0.42  | 0.42  | 0.43  | 0.43  | 0.43  | 0.44  | 0.44  | 0.44  | 0.45  | 0.45  | 0.45  | 0.45  | 0.6%      |
| Cooking   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity   | 0.70  | 0.71  | 0.71  | 0.72  | 0.72  | 0.73  | 0.73  | 0.73  | 0.73  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.74  | 0.75  | 0.75  | 0.75  | 0.3%      |
| Natural Gas   | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.51  | 0.52  | 0.52  | 0.52  | 0.52  | 0.52  | 0.1%      |
| Lighting Efficacy 4/<br>(efficacy in lumens per watt) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity   | 48.46 | 49.02 | 49.55 | 50.01 | 50.44 | 50.85 | 51.15 | 51.45 | 51.67 | 51.81 | 51.90 | 51.98 | 52.06 | 52.11 | 52.16 | 52.27 | 52.57 | 52.86 | 53.19 | 53.54 | 53.93 | 54.38 | 0.6%      |
| Refrigeration   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Electricity   | 1.31  | 1.32  | 1.32  | 1.33  | 1.33  | 1.33  | 1.33  | 1.34  | 1.34  | 1.34  | 1.34  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 1.35  | 0.1%      |

1/ Excludes commercial sector energy consumption (from uses such as street lights) that is not attributable to buildings.

2/ Unless noted otherwise, the efficiency measures are in the terms of Btu of energy output divided by Btu of energy input.

3/ The efficiency measure for ventilation is in terms of cubic feet per minute (cfm) of ventilation air delivered divided by Btu of energy input.

4/ A measurement of the ratio of light produced by a light source to the electrical power used to produce that quality of light, expressed in lumens per watt.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 23. Industrial Sector Macroeconomic Indicators (1 of 2)**

|   | 1999   | 2000   | 2001   | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 1999-2020 |  |
|---|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|--|
| GDP (billion 1996 dollars)                      | 8875.8 | 9338.4 | 9696.5 | 10036.4 | 10344.6 | 10641.8 | 10959.7 | 11273.3 | 11604.6 | 11950.9 | 12300.5 | 12666.7 | 13034.2 | 13424.8 | 13820.9 | 14231.7 | 14635.2 | 15024.7 | 15410.6 | 15774.9 | 16141.4 | 16514.9 | 3.0%      |  |
| Non-Agricultural Employment (million)           | 128.5  | 130.4  | 131.9  | 134.0   | 136.1   | 137.8   | 139.7   | 142.0   | 144.1   | 146.1   | 147.9   | 149.7   | 151.1   | 152.3   | 153.6   | 155.3   | 157.3   | 159.1   | 160.8   | 162.2   | 163.6   | 165.1   | 1.2%      |  |
| Value of Gross Output<br>(billion 1992 dollars) |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |  |
| Nonmanufacturing Sector                         |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |  |
| Agricultural                                    | 279.0  | 284.8  | 288.0  | 290.9   | 292.9   | 295.2   | 298.6   | 303.0   | 306.5   | 309.9   | 313.2   | 317.2   | 321.6   | 324.7   | 329.2   | 333.9   | 338.9   | 344.2   | 348.9   | 353.5   | 357.6   | 362.2   | 1.3%      |  |
| Mining  | 163.2  | 163.6  | 165.9  | 170.8   | 173.7   | 174.2   | 174.7   | 175.3   | 176.5   | 178.2   | 179.9   | 182.6   | 184.1   | 186.6   | 189.4   | 192.2   | 195.6   | 198.7   | 201.6   | 204.1   | 205.7   | 207.9   | 1.2%      |  |
| Construction                                    | 530.1  | 544.8  | 546.5  | 561.8   | 572.6   | 584.1   | 596.9   | 612.8   | 628.1   | 640.7   | 651.4   | 662.6   | 673.0   | 682.5   | 693.4   | 710.5   | 730.3   | 747.4   | 760.9   | 773.3   | 786.7   | 800.1   | 2.0%      |  |
| Manufacturing Sector                            |        |        |        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |  |
| Food and Kindred Products                       | 465.2  | 471.2  | 477.4  | 486.3   | 491.6   | 496.2   | 501.7   | 508.0   | 514.1   | 519.7   | 525.0   | 531.1   | 537.6   | 543.8   | 550.7   | 558.5   | 566.9   | 575.1   | 583.3   | 590.7   | 597.8   | 605.2   | 1.3%      |  |
| Tobacco Products                                | 44.5   | 45.3   | 45.4   | 45.9    | 46.1    | 46.3    | 46.3    | 46.4    | 46.5    | 46.4    | 46.4    | 46.4    | 46.4    | 46.4    | 46.5    | 46.5    | 46.5    | 46.5    | 46.5    | 46.5    | 46.4    | 46.5    | 0.2%      |  |
| Textile Mill Products                           | 63.0   | 63.3   | 63.8   | 63.6    | 64.0    | 64.1    | 64.5    | 65.2    | 65.5    | 65.9    | 66.1    | 66.6    | 67.1    | 67.4    | 67.8    | 68.2    | 68.7    | 69.0    | 69.2    | 69.5    | 69.9    | 70.3    | 0.5%      |  |
| Apparel and Other Textile Products              | 86.0   | 85.7   | 84.2   | 83.6    | 82.8    | 82.4    | 82.6    | 82.2    | 81.0    | 80.2    | 78.9    | 78.5    | 78.0    | 77.0    | 76.9    | 76.5    | 76.0    | 76.5    | 76.5    | 76.3    | 76.3    | 76.5    | -0.6%     |  |
| Lumber and Wood Products                        | 103.1  | 105.8  | 106.8  | 108.0   | 109.7   | 110.6   | 111.8   | 113.5   | 115.0   | 116.2   | 117.5   | 118.9   | 120.8   | 121.7   | 122.8   | 124.6   | 126.1   | 128.1   | 129.5   | 130.4   | 131.6   | 132.9   | 1.2%      |  |
| Furniture and Fixtures                          | 55.6   | 58.5   | 59.4   | 61.0    | 62.7    | 63.6    | 65.1    | 66.2    | 67.5    | 68.7    | 69.6    | 70.9    | 71.9    | 72.8    | 74.5    | 76.7    | 79.0    | 81.0    | 82.8    | 84.2    | 85.7    | 87.9    | 2.2%      |  |
| Paper and Allied Products                       | 150.5  | 154.1  | 157.8  | 161.6   | 164.8   | 167.5   | 170.6   | 173.9   | 177.2   | 180.3   | 183.1   | 186.1   | 188.4   | 191.0   | 194.1   | 196.5   | 199.3   | 201.8   | 204.1   | 206.1   | 208.1   | 210.3   | 1.6%      |  |
| Printing and Publishing                         | 178.8  | 181.7  | 183.8  | 187.7   | 190.4   | 192.7   | 196.1   | 199.7   | 203.3   | 206.6   | 209.4   | 212.8   | 215.2   | 217.6   | 220.8   | 224.5   | 228.9   | 233.0   | 236.6   | 240.2   | 243.7   | 247.7   | 1.6%      |  |
| Chemical and Allied Products                    | 347.1  | 358.0  | 367.4  | 378.4   | 389.0   | 397.0   | 406.0   | 415.5   | 425.6   | 434.9   | 444.2   | 454.4   | 462.9   | 472.9   | 483.9   | 495.4   | 507.7   | 520.4   | 534.0   | 547.6   | 562.3   | 577.9   | 2.5%      |  |
| Bulk Chemicals                                  | 177.4  | 180.8  | 184.2  | 186.6   | 190.0   | 192.1   | 194.5   | 197.4   | 200.4   | 202.9   | 205.1   | 207.6   | 209.1   | 211.7   | 214.4   | 216.9   | 219.8   | 222.1   | 224.8   | 227.4   | 230.4   | 233.4   | 1.3%      |  |
| Other Chemicals and Allied Products             | 169.7  | 177.2  | 183.2  | 191.8   | 199.0   | 204.9   | 211.5   | 218.1   | 225.2   | 232.0   | 239.1   | 246.8   | 253.8   | 261.2   | 269.5   | 278.4   | 287.9   | 298.3   | 309.2   | 320.2   | 331.9   | 344.5   | 3.4%      |  |
| Petroleum and Coal Products                     | 173.0  | 174.1  | 176.6  | 178.8   | 181.0   | 182.8   | 185.0   | 186.3   | 188.1   | 191.0   | 192.8   | 194.7   | 195.8   | 197.1   | 198.7   | 200.2   | 201.9   | 203.2   | 204.6   | 205.6   | 207.3   | 208.6   | 0.9%      |  |
| Petroleum Refining                              | 154.8  | 155.7  | 158.0  | 159.8   | 161.7   | 163.4   | 165.3   | 166.3   | 167.8   | 170.4   | 172.1   | 173.7   | 174.7   | 175.8   | 177.2   | 178.3   | 179.7   | 180.7   | 181.9   | 182.6   | 184.1   | 185.2   | 0.9%      |  |
| Other Petroleum and Coal Products               | 18.1   | 18.5   | 18.6   | 19.0    | 19.3    | 19.4    | 19.7    | 20.0    | 20.3    | 20.5    | 20.8    | 21.0    | 21.1    | 21.3    | 21.5    | 21.9    | 22.2    | 22.5    | 22.8    | 23.0    | 23.2    | 23.4    | 1.2%      |  |
| Rubber and Miscellaneous Plastic Proc           | 150.1  | 155.8  | 159.4  | 167.2   | 174.1   | 179.7   | 187.2   | 195.1   | 202.6   | 209.8   | 216.6   | 223.9   | 230.3   | 236.8   | 244.9   | 253.5   | 262.5   | 270.7   | 279.0   | 287.3   | 296.1   | 305.8   | 3.4%      |  |
| Leather and Leather Products                    | 7.0    | 6.4    | 5.9    | 5.6     | 5.2     | 4.6     | 4.2     | 4.0     | 3.5     | 3.2     | 3.0     | 2.7     | 2.4     | 2.4     | 2.2     | 2.1     | 2.2     | 2.3     | 2.2     | 2.1     | 2.1     | 2.2     | -5.3%     |  |
| Stone, Clay, and Glass Products                 | 77.1   | 78.2   | 78.3   | 79.2    | 80.2    | 80.9    | 81.9    | 83.2    | 84.4    | 85.5    | 86.1    | 86.9    | 87.5    | 88.2    | 89.0    | 90.2    | 91.3    | 92.3    | 93.4    | 94.2    | 95.0    | 96.1    | 1.1%      |  |
| Glass and Glass Products                        | 20.9   | 21.2   | 21.3   | 21.6    | 22.0    | 22.2    | 22.5    | 22.9    | 23.3    | 23.7    | 24.0    | 24.2    | 24.4    | 24.7    | 25.0    | 25.3    | 25.7    | 26.0    | 26.3    | 26.5    | 26.9    | 27.2    | 1.3%      |  |
| Cement, Hydraulic                               | 5.2    | 5.2    | 5.2    | 5.2     | 5.3     | 5.3     | 5.3     | 5.4     | 5.4     | 5.5     | 5.5     | 5.6     | 5.6     | 5.7     | 5.7     | 5.7     | 5.8     | 5.8     | 5.9     | 5.9     | 6.0     | 6.0     | 0.8%      |  |
| Other Stone, Clay, and Glass Product            | 51.1   | 51.8   | 51.8   | 52.3    | 53.0    | 53.4    | 54.1    | 54.9    | 55.7    | 56.3    | 56.6    | 57.1    | 57.5    | 57.8    | 58.3    | 59.2    | 59.8    | 60.5    | 61.2    | 61.8    | 62.1    | 62.8    | 1.0%      |  |

**Table 23. Industrial Sector Macroeconomic Indicators (2 of 2)**

|   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 1999-2020 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| Primary Metals Industry                 | 163.9  | 166.8  | 169.3  | 173.1  | 175.4  | 176.9  | 179.5  | 181.8  | 184.3  | 185.9  | 187.4  | 189.8  | 191.0  | 193.5  | 195.3  | 197.5  | 198.9  | 200.0  | 201.5  | 202.6  | 204.1  | 205.6  | 1.1%      |
| Blast Furnace and Basic Steel Product   | 67.8   | 69.9   | 71.4   | 73.5   | 74.6   | 75.4   | 76.9   | 77.7   | 79.0   | 79.6   | 80.1   | 81.4   | 81.8   | 83.3   | 83.9   | 84.9   | 85.1   | 85.7   | 86.4   | 86.7   | 87.4   | 88.3   | 1.3%      |
| Aluminum                                | 36.0   | 36.1   | 36.3   | 36.7   | 37.0   | 37.3   | 37.4   | 37.7   | 37.9   | 38.1   | 38.3   | 38.4   | 38.7   | 38.9   | 39.1   | 39.4   | 39.6   | 39.7   | 39.8   | 39.9   | 39.9   | 40.1   | 0.5%      |
| Other Primary Metal Products            | 60.2   | 60.8   | 61.6   | 63.0   | 63.8   | 64.2   | 65.2   | 66.3   | 67.4   | 68.2   | 69.0   | 70.0   | 70.5   | 71.4   | 72.3   | 73.2   | 74.1   | 74.6   | 75.4   | 76.1   | 76.8   | 77.3   | 1.2%      |
| Fabricated Metal Products               | 211.5  | 217.9  | 220.2  | 227.7  | 234.6  | 237.1  | 242.6  | 248.7  | 254.2  | 258.2  | 261.7  | 265.6  | 268.8  | 271.8  | 276.3  | 282.0  | 288.3  | 293.5  | 298.3  | 303.0  | 308.9  | 315.1  | 1.9%      |
| Industrial Machinery and Equipment      | 389.0  | 411.3  | 422.1  | 450.0  | 466.6  | 482.9  | 509.7  | 541.6  | 566.9  | 594.8  | 618.3  | 646.7  | 675.1  | 702.4  | 731.0  | 761.8  | 796.0  | 829.8  | 860.3  | 893.4  | 927.6  | 963.2  | 4.4%      |
| Electronic and Other Electric Equipment | 421.6  | 436.7  | 456.3  | 499.0  | 530.2  | 559.5  | 597.6  | 644.3  | 684.3  | 727.1  | 769.4  | 813.1  | 851.3  | 895.5  | 937.6  | 979.4  | 1030.0 | 1077.5 | 1138.2 | 1203.5 | 1279.3 | 1349.7 | 5.7%      |
| Transportation Equipment                | 457.8  | 469.7  | 460.4  | 479.3  | 497.0  | 499.4  | 520.1  | 538.4  | 556.7  | 572.8  | 587.7  | 605.4  | 621.3  | 635.3  | 659.3  | 683.1  | 706.4  | 724.0  | 742.0  | 759.7  | 780.2  | 806.2  | 2.7%      |
| Instruments and Related Products        | 152.9  | 156.7  | 160.9  | 169.1  | 176.3  | 182.0  | 188.8  | 197.2  | 205.3  | 213.0  | 221.1  | 229.1  | 237.1  | 244.8  | 253.7  | 264.1  | 275.8  | 286.9  | 297.1  | 307.2  | 318.2  | 330.6  | 3.7%      |
| Miscellaneous Manufacturing Industries  | 51.7   | 52.2   | 52.7   | 55.0   | 55.6   | 56.2   | 57.7   | 59.4   | 60.7   | 61.9   | 63.3   | 64.9   | 66.5   | 67.9   | 70.3   | 72.8   | 75.8   | 78.4   | 80.6   | 82.7   | 85.0   | 87.8   | 2.6%      |
| Total Industrial Gross Output           | 4721.8 | 4842.8 | 4908.4 | 5083.7 | 5216.5 | 5315.7 | 5469.3 | 5641.6 | 5798.0 | 5950.9 | 6092.1 | 6251.2 | 6394.5 | 6539.9 | 6708.4 | 6890.9 | 7093.0 | 7280.3 | 7471.1 | 7663.7 | 7875.6 | 8096.3 | 2.6%      |

GDP = Gross domestic product.

Note: Totals may not equal sum of components due to independent rounding.

Sources: 1999: Standard & Pooors DRI, Simulation T250200. Projections: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 24. Refining Industry Energy Consumption (1 of 1)**

|   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 1999-2020 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| <b>Industry Output and Consumption 1/</b>   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Industry Output (billion 1992 dollars)  | 154.83 | 155.66 | 157.96 | 159.79 | 161.72 | 163.38 | 165.25 | 166.26 | 167.84 | 170.42 | 172.07 | 173.74 | 174.71 | 175.76 | 177.18 | 178.35 | 179.71 | 180.70 | 181.87 | 182.56 | 184.07 | 185.19 | 0.9%      |
| Energy Consumption (trillion Btu)   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil  | 37.1   | 14.7   | 11.9   | 12.5   | 37.4   | 37.5   | 37.5   | 37.8   | 37.9   | 37.8   | 38.1   | 38.2   | 38.2   | 38.4   | 38.7   | 39.0   | 39.3   | 39.4   | 39.6   | 39.8   | 39.8   | 40.0   | 0.4%      |
| Distillate Oil  | 3.3    | 3.4    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | N/A       |
| Liquefied Petroleum Gas   | 14.9   | 15.2   | 49.2   | 47.7   | 40.3   | 39.2   | 36.2   | 26.4   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.6    | 14.5   | 15.0   | 18.7   | 23.7   | 33.9   | 36.0   | 38.8   | 4.7%      |
| Petroleum Coke  | 580.6  | 591.7  | 577.2  | 584.0  | 590.8  | 594.7  | 614.1  | 641.4  | 670.0  | 674.9  | 686.1  | 697.6  | 706.2  | 704.9  | 742.3  | 758.1  | 772.5  | 784.0  | 785.7  | 790.6  | 790.2  | 791.6  | 1.5%      |
| Still Gas   | 1414.1 | 1440.8 | 1500.0 | 1517.9 | 1512.1 | 1573.9 | 1579.4 | 1550.5 | 1574.9 | 1586.2 | 1603.7 | 1610.0 | 1612.3 | 1597.6 | 1619.6 | 1625.2 | 1631.6 | 1642.3 | 1642.5 | 1646.3 | 1672.5 | 1682.7 | 0.8%      |
| Other Petroleum 2/  | 35.8   | 36.4   | 5.9    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | N/A       |
| Petroleum Subtotal  | 2085.8 | 2102.2 | 2144.2 | 2162.1 | 2180.5 | 2245.4 | 2267.2 | 2256.0 | 2282.8 | 2298.9 | 2327.9 | 2345.8 | 2356.8 | 2341.0 | 2402.2 | 2436.7 | 2458.4 | 2484.5 | 2491.5 | 2510.5 | 2538.6 | 2553.0 | 1.0%      |
| Natural Gas   | 825.9  | 841.5  | 908.1  | 921.3  | 971.0  | 934.0  | 943.6  | 1015.5 | 1053.9 | 1064.1 | 1062.2 | 1059.7 | 1059.9 | 1074.2 | 1062.1 | 1039.9 | 1039.8 | 1024.6 | 1016.1 | 997.3  | 978.9  | 970.5  | 0.8%      |
| Steam Coal  | 0.8    | 0.8    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | N/A       |
| Purchased Electricity   | 111.6  | 113.7  | 130.8  | 125.4  | 134.8  | 140.1  | 146.4  | 160.5  | 163.7  | 166.5  | 165.5  | 167.6  | 166.8  | 162.7  | 161.5  | 159.3  | 158.0  | 158.3  | 157.5  | 155.9  | 156.4  | 155.4  | 1.6%      |
| Total   | 3024.1 | 3058.2 | 3183.1 | 3208.9 | 3286.4 | 3319.6 | 3357.2 | 3432.0 | 3500.5 | 3529.5 | 3555.6 | 3573.1 | 3583.4 | 3577.9 | 3625.9 | 3636.0 | 3656.2 | 3667.3 | 3665.1 | 3663.7 | 3674.0 | 3678.9 | 0.9%      |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil  | 0.24   | 0.09   | 0.08   | 0.08   | 0.23   | 0.23   | 0.23   | 0.23   | 0.23   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | 0.22   | -0.5%     |
| Distillate Oil  | 0.02   | 0.02   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | N/A       |
| Liquefied Petroleum Gas   | 0.10   | 0.10   | 0.31   | 0.30   | 0.25   | 0.24   | 0.22   | 0.16   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.01   | 0.08   | 0.08   | 0.10   | 0.13   | 0.19   | 0.20   | 0.21   | 3.8%      |
| Petroleum Coke  | 3.75   | 3.80   | 3.65   | 3.65   | 3.65   | 3.64   | 3.72   | 3.86   | 3.99   | 3.96   | 3.99   | 4.02   | 4.04   | 4.01   | 4.19   | 4.25   | 4.30   | 4.34   | 4.32   | 4.33   | 4.29   | 4.27   | 0.6%      |
| Still Gas   | 9.13   | 9.26   | 9.50   | 9.50   | 9.35   | 9.63   | 9.56   | 9.33   | 9.38   | 9.31   | 9.32   | 9.27   | 9.23   | 9.09   | 9.14   | 9.11   | 9.08   | 9.09   | 9.03   | 9.02   | 9.09   | 9.09   | 0.0%      |
| Other Petroleum 2/  | 0.23   | 0.23   | 0.04   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | N/A       |
| Petroleum Subtotal  | 13.47  | 13.51  | 13.57  | 13.53  | 13.48  | 13.74  | 13.72  | 13.57  | 13.60  | 13.49  | 13.53  | 13.50  | 13.49  | 13.32  | 13.56  | 13.66  | 13.68  | 13.75  | 13.70  | 13.75  | 13.79  | 13.79  | 0.1%      |
| Natural Gas   | 5.33   | 5.41   | 5.75   | 5.77   | 6.00   | 5.72   | 5.71   | 6.11   | 6.28   | 6.24   | 6.17   | 6.10   | 6.07   | 6.11   | 5.99   | 5.83   | 5.79   | 5.67   | 5.59   | 5.46   | 5.32   | 5.24   | -0.1%     |
| Steam Coal  | 0.01   | 0.01   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | N/A       |
| Purchased Electricity   | 0.72   | 0.73   | 0.83   | 0.79   | 0.83   | 0.86   | 0.89   | 0.97   | 0.98   | 0.98   | 0.96   | 0.96   | 0.95   | 0.93   | 0.91   | 0.89   | 0.88   | 0.88   | 0.87   | 0.85   | 0.85   | 0.84   | 0.7%      |
| Total   | 19.53  | 19.65  | 20.15  | 20.08  | 20.32  | 20.32  | 20.32  | 20.64  | 20.86  | 20.71  | 20.66  | 20.57  | 20.51  | 20.36  | 20.46  | 20.39  | 20.35  | 20.29  | 20.15  | 20.07  | 19.96  | 19.87  | 0.1%      |
| Carbon Dioxide Emissions 3/<br>(million metric tons carbon equivalent)            | 52.0   | 52.5   | 55.0   | 55.2   | 56.8   | 57.6   | 58.3   | 59.7   | 60.8   | 61.2   | 61.6   | 61.9   | 62.0   | 61.7   | 62.4   | 62.5   | 62.8   | 62.9   | 62.9   | 62.8   | 63.1   | 63.1   | 0.9%      |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes lubricants and miscellaneous petroleum products.

3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 25. Food Industry Energy Consumption (1 of 1)**

|   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 1999-  |        |       |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Industry Output and Consumption 1/  | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2020  |
| Industry Output (billion 1992 dollars)  | 465.22 | 471.17 | 477.43 | 486.26 | 491.60 | 496.17 | 501.73 | 508.00 | 514.07 | 519.67 | 525.00 | 531.05 | 537.58 | 543.76 | 550.72 | 558.52 | 566.89 | 575.13 | 583.26 | 590.65 | 597.75 | 605.16 | 1.3%  |
| Energy Consumption (trillion Btu)   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| Residual Oil  | 25.6   | 25.3   | 26.0   | 26.5   | 26.6   | 26.5   | 26.9   | 27.2   | 27.5   | 27.7   | 27.8   | 28.1   | 28.3   | 28.5   | 28.8   | 29.1   | 29.6   | 30.0   | 30.4   | 30.8   | 31.2   | 31.7   | 1.0%  |
| Distillate Oil  | 23.8   | 23.3   | 25.0   | 25.0   | 24.9   | 24.7   | 24.9   | 25.3   | 25.4   | 25.6   | 25.6   | 25.8   | 26.0   | 26.1   | 26.3   | 26.6   | 26.7   | 27.1   | 27.4   | 27.8   | 28.1   | 28.5   | 0.9%  |
| Liquefied Petroleum Gas   | 5.5    | 6.3    | 6.0    | 5.9    | 5.7    | 5.7    | 5.7    | 5.8    | 5.8    | 6.0    | 6.0    | 6.0    | 6.1    | 6.1    | 6.4    | 6.5    | 6.5    | 6.6    | 6.7    | 6.8    | 7.0    | 7.1    | 1.3%  |
| Other Petroleum 2/  | 92.6   | 95.2   | 97.4   | 98.2   | 98.8   | 99.1   | 100.6  | 102.2  | 103.7  | 105.1  | 106.3  | 107.8  | 109.3  | 110.7  | 112.3  | 114.2  | 116.2  | 118.3  | 120.3  | 122.3  | 124.3  | 126.4  | 1.5%  |
| Petroleum Subtotal  | 147.6  | 150.2  | 154.4  | 155.6  | 156.0  | 156.0  | 158.1  | 160.5  | 162.4  | 164.4  | 165.8  | 167.7  | 169.6  | 171.4  | 173.8  | 176.3  | 179.0  | 181.9  | 184.9  | 187.7  | 190.5  | 193.8  | 1.3%  |
| Natural Gas   | 662.5  | 662.0  | 664.0  | 677.9  | 688.8  | 696.1  | 701.9  | 708.5  | 714.8  | 720.0  | 725.5  | 731.7  | 738.6  | 745.1  | 752.3  | 760.9  | 770.4  | 779.5  | 788.3  | 796.1  | 803.2  | 810.2  | 1.0%  |
| Steam Coal  | 152.0  | 155.9  | 156.2  | 154.9  | 155.7  | 156.2  | 156.9  | 157.5  | 158.1  | 158.6  | 159.0  | 159.5  | 159.9  | 160.4  | 160.8  | 161.4  | 162.0  | 162.6  | 163.3  | 164.0  | 164.7  | 165.5  | 0.4%  |
| Renewables  | 12.9   | 13.1   | 13.3   | 13.6   | 13.7   | 13.9   | 14.1   | 14.3   | 14.5   | 14.7   | 14.8   | 15.0   | 15.3   | 15.5   | 15.7   | 15.9   | 16.2   | 16.5   | 16.8   | 17.0   | 17.2   | 17.5   | 1.5%  |
| Purchased Electricity   | 204.6  | 207.0  | 208.7  | 210.4  | 208.7  | 206.7  | 205.9  | 205.7  | 205.9  | 206.1  | 206.2  | 206.7  | 207.4  | 208.2  | 209.2  | 210.4  | 212.0  | 213.4  | 214.7  | 215.8  | 216.9  | 218.0  | 0.3%  |
| Total   | 1179.6 | 1188.2 | 1196.7 | 1212.4 | 1222.9 | 1228.9 | 1236.9 | 1246.5 | 1255.6 | 1263.7 | 1271.3 | 1280.5 | 1290.9 | 1300.5 | 1311.8 | 1325.0 | 1339.6 | 1353.9 | 1368.0 | 1380.6 | 1392.5 | 1405.1 | 0.8%  |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| Residual Oil  | 0.06   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | -0.2% |
| Distillate Oil  | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | -0.4% |
| Liquefied Petroleum Gas   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.01   | 0.0%  |
| Other Petroleum 2/  | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.20   | 0.21   | 0.21   | 0.21   | 0.21   | 0.21   | 0.2%  |
| Petroleum Subtotal  | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.31   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.32   | 0.0%  |
| Natural Gas   | 1.42   | 1.40   | 1.39   | 1.39   | 1.40   | 1.40   | 1.39   | 1.39   | 1.39   | 1.39   | 1.38   | 1.38   | 1.37   | 1.37   | 1.37   | 1.36   | 1.36   | 1.36   | 1.35   | 1.35   | 1.34   | 1.34   | -0.3% |
| Steam Coal  | 0.33   | 0.33   | 0.33   | 0.32   | 0.32   | 0.31   | 0.31   | 0.31   | 0.31   | 0.31   | 0.30   | 0.30   | 0.29   | 0.29   | 0.29   | 0.29   | 0.29   | 0.28   | 0.28   | 0.28   | 0.28   | 0.27   | -0.8% |
| Renewables  | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.03   | 0.2%  |
| Purchased Electricity   | 0.44   | 0.44   | 0.44   | 0.43   | 0.42   | 0.42   | 0.41   | 0.40   | 0.40   | 0.40   | 0.39   | 0.39   | 0.39   | 0.38   | 0.38   | 0.38   | 0.37   | 0.37   | 0.37   | 0.37   | 0.36   | 0.36   | -0.9% |
| Total   | 2.54   | 2.52   | 2.51   | 2.49   | 2.49   | 2.48   | 2.47   | 2.45   | 2.44   | 2.43   | 2.42   | 2.41   | 2.40   | 2.39   | 2.38   | 2.37   | 2.36   | 2.35   | 2.35   | 2.34   | 2.33   | 2.32   | -0.4% |
| Carbon Dioxide Emissions 3/<br>(million metric tons carbon equivalent)            | 26.5   | 26.8   | 27.1   | 27.3   | 27.4   | 27.4   | 27.4   | 27.5   | 27.6   | 27.7   | 27.7   | 27.9   | 28.0   | 28.2   | 28.4   | 28.6   | 28.9   | 29.1   | 29.4   | 29.6   | 29.8   | 30.0   | 0.6%  |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes petroleum coke, lubricants, and miscellaneous petroleum products.

3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.



**Table 26. Paper Industry Energy Consumption**

|   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 1999-2020 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| <b>Industry Output and Consumption 1/</b>   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Industry Output (billion 1992 dollars)  | 150.46 | 154.07 | 157.81 | 161.57 | 164.77 | 167.48 | 170.60 | 173.92 | 177.19 | 180.27 | 183.05 | 186.09 | 188.41 | 191.00 | 194.09 | 196.51 | 199.31 | 201.77 | 204.07 | 206.09 | 208.13 | 210.32 | 1.6%      |
| Energy Consumption (trillion Btu)   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil  | 139.1  | 135.7  | 136.7  | 135.5  | 135.3  | 134.5  | 135.0  | 135.5  | 135.9  | 136.0  | 136.0  | 136.1  | 135.8  | 135.7  | 135.9  | 135.9  | 136.1  | 136.3  | 136.6  | 136.4  | 135.4  | 134.7  | -0.2%     |
| Distillate Oil  | 10.5   | 10.3   | 10.9   | 10.6   | 10.6   | 10.5   | 10.5   | 9.4    | 8.7    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.9    | 8.9    | 8.9    | 8.9    | 8.9    | -0.8%     |
| Liquefied Petroleum Gas   | 3.6    | 4.6    | 4.2    | 4.0    | 3.9    | 3.8    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 4.1    | 4.1    | 4.1    | 4.2    | 4.2    | 4.2    | 4.2    | 4.3    | 0.9%      |
| Petroleum Subtotal  | 153.2  | 150.6  | 151.7  | 150.2  | 149.9  | 148.9  | 149.4  | 148.7  | 148.5  | 148.8  | 148.7  | 148.8  | 148.6  | 148.5  | 148.9  | 148.8  | 149.1  | 149.4  | 149.7  | 149.5  | 148.6  | 148.0  | -0.2%     |
| Natural Gas   | 587.2  | 582.7  | 577.9  | 577.6  | 590.3  | 592.5  | 593.0  | 593.7  | 597.4  | 600.4  | 603.1  | 606.3  | 608.2  | 610.5  | 614.0  | 616.5  | 620.0  | 622.9  | 625.6  | 628.7  | 633.7  | 638.6  | 0.4%      |
| Steam Coal  | 280.6  | 277.1  | 272.3  | 266.7  | 269.1  | 267.7  | 266.6  | 266.7  | 266.7  | 266.5  | 266.4  | 266.2  | 266.1  | 266.0  | 265.8  | 265.9  | 266.1  | 266.3  | 266.1  | 264.8  | 263.5  |        | -0.3%     |
| Renewables  | 1439.2 | 1470.2 | 1502.0 | 1534.3 | 1561.9 | 1586.0 | 1613.9 | 1643.5 | 1672.9 | 1701.3 | 1727.1 | 1755.1 | 1777.6 | 1801.8 | 1830.8 | 1854.3 | 1881.3 | 1905.2 | 1927.9 | 1948.1 | 1968.7 | 1991.7 | 1.6%      |
| Purchased Electricity   | 244.1  | 249.3  | 253.4  | 259.8  | 256.0  | 255.9  | 255.2  | 255.3  | 256.1  | 257.3  | 258.4  | 260.0  | 261.0  | 262.5  | 264.7  | 266.1  | 268.0  | 269.7  | 271.3  | 272.8  | 274.6  | 276.8  | 0.6%      |
| Total   | 2704.3 | 2729.9 | 2757.4 | 2788.5 | 2829.1 | 2851.0 | 2878.0 | 2908.0 | 2941.7 | 2974.4 | 3003.6 | 3036.5 | 3061.4 | 3089.3 | 3124.2 | 3151.6 | 3184.4 | 3213.2 | 3240.7 | 3265.2 | 3290.4 | 3318.6 | 1.0%      |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil  | 0.92   | 0.88   | 0.87   | 0.84   | 0.82   | 0.80   | 0.79   | 0.78   | 0.77   | 0.75   | 0.74   | 0.73   | 0.72   | 0.71   | 0.70   | 0.69   | 0.68   | 0.68   | 0.67   | 0.66   | 0.65   | 0.64   | -1.7%     |
| Distillate Oil  | 0.07   | 0.07   | 0.07   | 0.07   | 0.06   | 0.06   | 0.06   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.05   | 0.04   | 0.04   | 0.04   | 0.04   | 0.04   | 0.04   | -2.3%     |
| Liquefied Petroleum Gas   | 0.02   | 0.03   | 0.03   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | 0.02   | -0.7%     |
| Petroleum Subtotal  | 1.02   | 0.98   | 0.96   | 0.93   | 0.91   | 0.89   | 0.88   | 0.86   | 0.84   | 0.83   | 0.81   | 0.80   | 0.79   | 0.78   | 0.77   | 0.76   | 0.75   | 0.74   | 0.73   | 0.71   | 0.70   |        | -1.7%     |
| Natural Gas   | 3.90   | 3.78   | 3.66   | 3.57   | 3.58   | 3.54   | 3.48   | 3.41   | 3.37   | 3.33   | 3.29   | 3.26   | 3.23   | 3.20   | 3.16   | 3.14   | 3.11   | 3.09   | 3.07   | 3.05   | 3.04   | 3.04   | -1.2%     |
| Steam Coal  | 1.86   | 1.80   | 1.73   | 1.65   | 1.63   | 1.60   | 1.56   | 1.53   | 1.51   | 1.48   | 1.46   | 1.43   | 1.41   | 1.39   | 1.37   | 1.35   | 1.33   | 1.32   | 1.30   | 1.29   | 1.27   | 1.25   | -1.9%     |
| Renewables  | 9.56   | 9.54   | 9.52   | 9.50   | 9.48   | 9.47   | 9.46   | 9.45   | 9.44   | 9.44   | 9.43   | 9.43   | 9.43   | 9.43   | 9.43   | 9.44   | 9.44   | 9.44   | 9.45   | 9.45   | 9.46   | 9.47   | 0.0%      |
| Purchased Electricity   | 1.62   | 1.62   | 1.61   | 1.61   | 1.57   | 1.53   | 1.50   | 1.47   | 1.45   | 1.43   | 1.41   | 1.40   | 1.39   | 1.37   | 1.36   | 1.35   | 1.34   | 1.34   | 1.33   | 1.32   | 1.32   | 1.32   | -1.0%     |
| Total   | 17.97  | 17.72  | 17.47  | 17.26  | 17.17  | 17.02  | 16.87  | 16.72  | 16.60  | 16.50  | 16.41  | 16.32  | 16.25  | 16.17  | 16.10  | 16.04  | 15.98  | 15.93  | 15.88  | 15.84  | 15.81  | 15.78  | -0.6%     |
| Carbon Dioxide Emissions 2/<br>(million metric tons carbon equivalent)            | 30.8   | 31.0   | 31.1   | 31.2   | 31.4   | 31.2   | 31.0   | 30.9   | 31.0   | 31.0   | 31.0   | 31.1   | 31.1   | 31.2   | 31.3   | 31.4   | 31.6   | 31.6   | 31.8   | 31.9   | 31.9   | 32.0   | 0.2%      |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 27. Bulk Chemical Industry Energy Consumption (1 of 1)**

|  | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 1999-2020 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| <b>Industry Output and Consumption 1/</b>    |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Industry Output (billion 1992 dollars)       | 177.44 | 180.81 | 184.21 | 186.58 | 189.99 | 192.09 | 194.47 | 197.38 | 200.38 | 202.90 | 205.14 | 207.58 | 209.13 | 211.69 | 214.36 | 216.93 | 219.78 | 222.06 | 224.79 | 227.40 | 230.40 | 233.43 | 1.3%      |
| <b>Energy Consumption (trillion Btu)</b>     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Heat and Power</b>                        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil                                 | 50.6   | 50.4   | 52.0   | 51.8   | 52.1   | 52.1   | 52.9   | 53.7   | 54.6   | 55.3   | 55.8   | 56.4   | 56.7   | 57.3   | 58.0   | 58.6   | 59.4   | 60.1   | 61.0   | 61.8   | 62.8   | 63.9   | 1.1%      |
| Distillate Oil                               | 5.9    | 5.7    | 6.3    | 6.2    | 6.0    | 5.9    | 6.0    | 6.1    | 6.2    | 6.3    | 6.3    | 6.3    | 6.3    | 6.4    | 6.4    | 6.5    | 6.5    | 6.6    | 6.6    | 6.7    | 6.8    | 6.9    | 0.7%      |
| Liquefied Petroleum Gas                      | 1.9    | 2.5    | 2.3    | 2.2    | 2.1    | 2.1    | 2.1    | 2.1    | 2.1    | 2.2    | 2.2    | 2.2    | 2.2    | 2.2    | 2.4    | 2.4    | 2.4    | 2.5    | 2.5    | 2.6    | 2.6    | 2.7    | 1.7%      |
| Other Petroleum 2/                           | 463.4  | 477.7  | 490.7  | 488.8  | 493.4  | 495.4  | 502.6  | 510.7  | 519.1  | 526.1  | 531.4  | 537.6  | 541.2  | 547.2  | 554.0  | 560.6  | 568.4  | 575.0  | 582.9  | 590.6  | 599.4  | 609.0  | 1.3%      |
| Petroleum Subtotal                           | 521.8  | 536.3  | 551.4  | 548.9  | 553.7  | 555.5  | 563.6  | 572.7  | 582.0  | 589.9  | 595.7  | 602.6  | 606.5  | 613.1  | 620.8  | 628.2  | 636.7  | 644.1  | 653.1  | 661.8  | 671.7  | 682.6  | 1.3%      |
| Natural Gas                                  | 1764.4 | 1773.9 | 1797.8 | 1819.9 | 1857.9 | 1879.9 | 1896.8 | 1918.3 | 1940.0 | 1957.2 | 1972.9 | 1990.0 | 1999.6 | 2017.8 | 2036.2 | 2054.5 | 2074.7 | 2090.2 | 2109.1 | 2127.1 | 2147.8 | 2167.7 | 1.0%      |
| Steam Coal                                   | 205.7  | 207.9  | 209.0  | 208.1  | 209.1  | 210.1  | 211.2  | 212.1  | 212.9  | 213.7  | 214.4  | 215.0  | 215.7  | 216.3  | 216.9  | 217.5  | 218.2  | 218.9  | 219.6  | 220.3  | 221.0  | 221.8  | 0.4%      |
| Purchased Electricity                        | 473.5  | 483.4  | 481.8  | 484.6  | 484.4  | 480.9  | 480.0  | 480.9  | 483.0  | 484.0  | 484.3  | 485.4  | 484.0  | 486.0  | 488.5  | 490.4  | 493.2  | 494.4  | 496.9  | 499.0  | 502.7  | 506.7  | 0.3%      |
| Total Heat and Power                         | 2965.4 | 3001.6 | 3039.9 | 3061.5 | 3105.0 | 3126.4 | 3151.5 | 3184.1 | 3217.9 | 3244.7 | 3267.3 | 3293.0 | 3305.9 | 3333.2 | 3362.4 | 3390.6 | 3422.8 | 3447.6 | 3478.7 | 3508.2 | 3543.2 | 3578.8 | 0.9%      |
| <b>Feedstock</b>                             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Liquefied Petroleum Gas                      | 1602.0 | 1628.3 | 1654.9 | 1672.6 | 1699.5 | 1715.0 | 1732.9 | 1755.4 | 1778.9 | 1798.2 | 1815.0 | 1833.7 | 1844.8 | 1864.4 | 1885.0 | 1904.8 | 1926.9 | 1944.3 | 1965.4 | 1985.4 | 2008.9 | 2032.6 | 1.1%      |
| Petrochemical Feedstocks                     | 1294.5 | 1315.7 | 1337.2 | 1351.5 | 1373.2 | 1385.7 | 1400.2 | 1418.4 | 1437.3 | 1452.9 | 1466.6 | 1481.6 | 1490.6 | 1506.4 | 1523.1 | 1539.1 | 1557.0 | 1571.0 | 1588.0 | 1604.2 | 1623.2 | 1642.3 | 1.1%      |
| Natural Gas                                  | 705.6  | 717.2  | 728.9  | 736.7  | 748.5  | 755.3  | 763.3  | 773.2  | 783.5  | 792.0  | 799.4  | 807.6  | 812.5  | 821.1  | 830.2  | 839.0  | 848.7  | 856.3  | 865.6  | 874.5  | 884.8  | 895.2  | 1.1%      |
| Total Feedstocks                             | 3602.1 | 3661.2 | 3720.9 | 3760.8 | 3821.2 | 3856.0 | 3896.4 | 3947.0 | 3999.7 | 4043.1 | 4081.0 | 4122.9 | 4147.8 | 4191.9 | 4238.4 | 4282.9 | 4332.6 | 4371.7 | 4419.0 | 4464.1 | 4516.8 | 4570.2 | 1.1%      |
| Total  | 6567.5 | 6662.7 | 6760.8 | 6822.3 | 6926.3 | 6982.4 | 7047.9 | 7131.1 | 7217.6 | 7287.8 | 7348.3 | 7415.9 | 7453.7 | 7525.2 | 7600.8 | 7673.5 | 7755.4 | 7819.2 | 7897.7 | 7972.3 | 8060.0 | 8148.9 | 1.0%      |
| <b>Energy Consumption per Unit of Output</b> |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| (thousand Btu per 1992 dollar of output)     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| <b>Heat and Power</b>                        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Residual Oil                                 | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | 0.3    | -0.2%     |
| Distillate Oil                               | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | -0.6%     |
| Liquefied Petroleum Gas                      | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.4%      |
| Other Petroleum                              | 2.6    | 2.6    | 2.7    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 2.6    | 0.0%      |
| Petroleum Subtotal                           | 2.9    | 3.0    | 3.0    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 0.0%      |
| Natural Gas 2/                               | 9.9    | 9.8    | 9.8    | 9.8    | 9.8    | 9.8    | 9.8    | 9.7    | 9.7    | 9.6    | 9.6    | 9.6    | 9.6    | 9.5    | 9.5    | 9.5    | 9.4    | 9.4    | 9.4    | 9.4    | 9.3    | 9.3    | -0.3%     |
| Steam Coal                                   | 1.2    | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    | 1.1    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | -0.9%     |
| Purchased Electricity                        | 2.7    | 2.7    | 2.6    | 2.6    | 2.5    | 2.5    | 2.5    | 2.4    | 2.4    | 2.4    | 2.4    | 2.3    | 2.3    | 2.3    | 2.3    | 2.3    | 2.2    | 2.2    | 2.2    | 2.2    | 2.2    | 2.2    | -1.0%     |
| Total Heat and Power                         | 16.7   | 16.6   | 16.5   | 16.4   | 16.3   | 16.3   | 16.2   | 16.1   | 16.1   | 16.0   | 15.9   | 15.9   | 15.8   | 15.7   | 15.7   | 15.6   | 15.6   | 15.5   | 15.5   | 15.4   | 15.4   | 15.3   | -0.4%     |
| <b>Feedstock</b>                             |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| Liquefied Petroleum Gas                      | 9.0    | 9.0    | 9.0    | 9.0    | 8.9    | 8.9    | 8.9    | 8.9    | 8.9    | 8.9    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.8    | 8.7    | 8.7    | 8.7    | 8.7    | -0.2%     |
| Petrochemical Feedstocks                     | 7.3    | 7.3    | 7.3    | 7.2    | 7.2    | 7.2    | 7.2    | 7.2    | 7.2    | 7.2    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.1    | 7.0    | 7.0    | -0.2%     |
| Natural Gas 2/                               | 4.0    | 4.0    | 4.0    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.8    | 3.8    | 3.8    | -0.2%     |
| Total Feedstocks                             | 20.3   | 20.2   | 20.2   | 20.2   | 20.1   | 20.1   | 20.0   | 20.0   | 20.0   | 19.9   | 19.9   | 19.9   | 19.8   | 19.8   | 19.8   | 19.7   | 19.7   | 19.7   | 19.7   | 19.6   | 19.6   | 19.6   | -0.2%     |
| Total  | 37.0   | 36.8   | 36.7   | 36.6   | 36.5   | 36.3   | 36.2   | 36.1   | 36.0   | 35.9   | 35.8   | 35.7   | 35.6   | 35.5   | 35.5   | 35.4   | 35.3   | 35.2   | 35.1   | 35.1   | 35.0   | 34.9   | -0.3%     |
| <b>Carbon Dioxide Emissions 3/</b>           |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |           |
| (million metric tons carbon equivalent)      | 82.8   | 84.3   | 85.4   | 85.9   | 86.9   | 87.2   | 87.6   | 88.2   | 89.0   | 89.6   | 89.9   | 90.6   | 90.8   | 91.4   | 92.2   | 92.9   | 93.8   | 94.3   | 95.2   | 95.9   | 96.8   | 97.7   | 0.8%      |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes petroleum coke, lubricants, and miscellaneous petroleum products.

3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 28. Glass Industry Energy Consumption (1 of 1)**

|   | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 1999-2020 |       |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|
| <b>Industry Output and Consumption 1/</b>   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |       |
| Industry Output (billion 1992 dollars)  | 20.85 | 21.22 | 21.31 | 21.63 | 21.96 | 22.21 | 22.52 | 22.94 | 23.32 | 23.69 | 23.99 | 24.22 | 24.41 | 24.74 | 25.00 | 25.34 | 25.71 | 25.96 | 26.28 | 26.49 | 26.86 | 27.20 | 1.3%      |       |
| Energy Consumption (trillion Btu)   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |       |
| Residual Oil  | 4.3   | 3.9   | 4.2   | 4.2   | 4.1   | 4.0   | 4.0   | 4.0   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.2   | 4.2   | 4.2   | 4.3   | 4.3   | 4.4   | 4.5   | 0.2%      |       |
| Distillate Oil  | 0.6   | 0.5   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.3%      |       |
| Liquefied Petroleum Gas   | 0.5   | 0.6   | 0.6   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.5   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 1.0%      |       |
| Petroleum Subtotal  | 5.4   | 5.0   | 5.4   | 5.4   | 5.2   | 5.0   | 5.1   | 5.1   | 5.2   | 5.2   | 5.2   | 5.2   | 5.2   | 5.2   | 5.3   | 5.3   | 5.4   | 5.4   | 5.5   | 5.5   | 5.6   | 5.8   | 0.3%      |       |
| Natural Gas   | 162.6 | 163.7 | 162.4 | 163.4 | 164.4 | 164.9 | 165.5 | 166.8 | 167.8 | 168.8 | 169.4 | 169.6 | 169.5 | 170.3 | 170.6 | 171.5 | 172.5 | 172.8 | 173.4 | 173.5 | 174.4 | 175.1 | 0.4%      |       |
| Purchased Electricity   | 31.3  | 31.9  | 31.8  | 31.9  | 32.0  | 32.1  | 32.4  | 32.8  | 33.1  | 33.4  | 33.6  | 33.7  | 33.8  | 34.0  | 34.2  | 34.4  | 34.7  | 34.8  | 35.0  | 35.1  | 35.4  | 35.7  | 0.6%      |       |
| Total   | 199.3 | 200.6 | 199.7 | 200.7 | 201.6 | 202.0 | 203.0 | 204.7 | 206.1 | 207.4 | 208.2 | 208.5 | 208.5 | 209.5 | 210.1 | 211.2 | 212.5 | 213.0 | 213.9 | 214.1 | 215.5 | 216.6 | 0.4%      |       |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |       |
| Residual Oil  | 0.21  | 0.18  | 0.20  | 0.19  | 0.19  | 0.18  | 0.18  | 0.18  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.17  | 0.16  | 0.16  | 0.16  | 0.16  | 0.16  | 0.16  | 0.17  | -1.0%     |       |
| Distillate Oil  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02      | -1.0% |
| Liquefied Petroleum Gas   | 0.03  | 0.03  | 0.03  | 0.03  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02  | 0.02      | -0.3% |
| Petroleum Subtotal  | 0.26  | 0.24  | 0.26  | 0.25  | 0.24  | 0.23  | 0.22  | 0.22  | 0.22  | 0.22  | 0.22  | 0.22  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21  | 0.21      | -0.9% |
| Natural Gas   | 7.80  | 7.71  | 7.62  | 7.55  | 7.49  | 7.42  | 7.35  | 7.27  | 7.20  | 7.12  | 7.06  | 7.00  | 6.94  | 6.88  | 6.82  | 6.77  | 6.71  | 6.65  | 6.60  | 6.55  | 6.49  | 6.44  | -0.9%     |       |
| Purchased Electricity   | 1.50  | 1.50  | 1.49  | 1.48  | 1.46  | 1.45  | 1.44  | 1.43  | 1.42  | 1.41  | 1.40  | 1.39  | 1.38  | 1.37  | 1.37  | 1.36  | 1.35  | 1.34  | 1.33  | 1.33  | 1.32  | 1.31  | -0.6%     |       |
| Total   | 9.56  | 9.45  | 9.37  | 9.28  | 9.18  | 9.10  | 9.01  | 8.92  | 8.84  | 8.76  | 8.68  | 8.61  | 8.54  | 8.47  | 8.40  | 8.33  | 8.27  | 8.20  | 8.14  | 8.08  | 8.02  | 7.96  | -0.9%     |       |
| Carbon Dioxide Emissions 2/<br>(million metric tons carbon equivalent)            | 4.0   | 4.0   | 4.0   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   | 4.2   | 4.3   | 4.3   | 4.3   | 4.3   | 0.4%      |       |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 29. Cement Industry Energy Consumption (1 of 1)**

|  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 1999-2020 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| Industry Output and Consumption 1/       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Industry Output (billion 1992 dollars)   | 5.16  | 5.21  | 5.24  | 5.25  | 5.28  | 5.29  | 5.32  | 5.37  | 5.43  | 5.47  | 5.51  | 5.56  | 5.61  | 5.66  | 5.69  | 5.74  | 5.76  | 5.81  | 5.88  | 5.93  | 5.97  | 6.03  | 0.8%      |
| Energy Consumption (trillion Btu)        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Residual Oil                             | 1.3   | 0.9   | 1.0   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.1   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 0.9   | 0.9   | 0.9   | 0.9   | -1.7%     |
| Distillate Oil                           | 3.7   | 2.6   | 3.1   | 3.2   | 3.2   | 3.2   | 3.1   | 3.1   | 3.1   | 3.1   | 3.0   | 2.9   | 2.9   | 2.9   | 2.8   | 2.8   | 2.7   | 2.7   | 2.7   | 2.6   | 2.6   | 2.6   | -1.8%     |
| Other Petroleum 2/                       | 65.6  | 65.7  | 65.6  | 65.2  | 65.0  | 64.6  | 64.5  | 64.6  | 64.7  | 64.7  | 64.7  | 64.8  | 64.8  | 64.9  | 64.8  | 64.9  | 64.7  | 64.8  | 65.1  | 65.2  | 65.2  | 65.4  | 0.0%      |
| Petroleum Subtotal                       | 70.7  | 69.2  | 69.6  | 69.4  | 69.3  | 68.9  | 68.7  | 68.8  | 68.8  | 68.7  | 68.7  | 68.7  | 68.8  | 68.7  | 68.6  | 68.7  | 68.4  | 68.4  | 68.7  | 68.8  | 68.7  | 68.9  | -0.1%     |
| Natural Gas                              | 32.6  | 24.7  | 24.5  | 27.0  | 28.4  | 28.7  | 28.4  | 28.0  | 27.7  | 27.3  | 27.0  | 26.7  | 26.5  | 26.3  | 25.9  | 25.6  | 25.2  | 24.8  | 24.5  | 24.1  | 23.6  | 23.0  | -1.6%     |
| Steam Coal                               | 254.2 | 263.4 | 262.8 | 258.1 | 255.6 | 253.6 | 253.3 | 253.4 | 254.1 | 254.2 | 254.1 | 254.4 | 254.7 | 254.8 | 254.5 | 255.0 | 254.5 | 255.2 | 256.4 | 257.0 | 257.2 | 258.4 | 0.1%      |
| Purchased Electricity                    | 44.1  | 44.3  | 44.1  | 43.9  | 43.8  | 43.7  | 43.8  | 43.9  | 44.2  | 44.3  | 44.4  | 44.6  | 44.7  | 44.9  | 44.9  | 45.0  | 45.0  | 45.2  | 45.5  | 45.7  | 45.7  | 46.0  | 0.2%      |
| Total                                    | 401.6 | 401.6 | 401.1 | 398.4 | 397.1 | 394.9 | 394.1 | 394.1 | 394.8 | 394.7 | 394.2 | 394.4 | 394.7 | 394.7 | 393.9 | 394.3 | 393.0 | 393.6 | 395.0 | 395.4 | 395.2 | 396.3 | -0.1%     |
| Energy Consumption per Unit of Output    |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| (thousand Btu per 1992 dollar of output) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Residual Oil                             | 0.26  | 0.18  | 0.19  | 0.21  | 0.21  | 0.20  | 0.20  | 0.20  | 0.19  | 0.19  | 0.19  | 0.18  | 0.18  | 0.18  | 0.17  | 0.17  | 0.17  | 0.16  | 0.16  | 0.16  | 0.16  | 0.15  | -2.5%     |
| Distillate Oil                           | 0.72  | 0.50  | 0.58  | 0.61  | 0.62  | 0.60  | 0.59  | 0.59  | 0.57  | 0.56  | 0.54  | 0.53  | 0.52  | 0.51  | 0.50  | 0.49  | 0.47  | 0.46  | 0.45  | 0.44  | 0.44  | 0.43  | -2.5%     |
| Other Petroleum 2/                       | 12.73 | 12.61 | 12.51 | 12.41 | 12.32 | 12.23 | 12.13 | 12.03 | 11.92 | 11.83 | 11.74 | 11.65 | 11.56 | 11.47 | 11.39 | 11.31 | 11.23 | 11.15 | 11.07 | 10.99 | 10.92 | 10.84 | -0.8%     |
| Petroleum Subtotal                       | 13.71 | 13.29 | 13.28 | 13.23 | 13.14 | 13.03 | 12.92 | 12.81 | 12.69 | 12.58 | 12.47 | 12.36 | 12.26 | 12.16 | 12.06 | 11.97 | 11.87 | 11.78 | 11.68 | 11.59 | 11.51 | 11.42 | -0.9%     |
| Natural Gas                              | 6.33  | 4.75  | 4.67  | 5.14  | 5.38  | 5.44  | 5.33  | 5.21  | 5.10  | 4.99  | 4.90  | 4.81  | 4.72  | 4.64  | 4.56  | 4.47  | 4.38  | 4.27  | 4.16  | 4.06  | 3.95  | 3.82  | -2.4%     |
| Steam Coal                               | 49.31 | 50.61 | 50.11 | 49.16 | 48.45 | 47.98 | 47.60 | 47.21 | 46.81 | 46.46 | 46.11 | 45.75 | 45.39 | 45.06 | 44.76 | 44.44 | 44.20 | 43.91 | 43.60 | 43.33 | 43.09 | 42.85 | -0.7%     |
| Purchased Electricity                    | 8.56  | 8.51  | 8.41  | 8.36  | 8.30  | 8.26  | 8.23  | 8.18  | 8.15  | 8.10  | 8.06  | 8.02  | 7.97  | 7.93  | 7.89  | 7.85  | 7.82  | 7.78  | 7.74  | 7.70  | 7.67  | 7.63  | -0.5%     |
| Total                                    | 77.91 | 77.17 | 76.48 | 75.89 | 75.27 | 74.71 | 74.08 | 73.42 | 72.74 | 72.13 | 71.54 | 70.94 | 70.34 | 69.79 | 69.28 | 68.73 | 68.27 | 67.73 | 67.18 | 66.67 | 66.22 | 65.71 | -0.8%     |
| Carbon Dioxide Emissions 3/              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| (million metric tons carbon equivalent)  | 10.5  | 10.6  | 10.6  | 10.5  | 10.5  | 10.4  | 10.4  | 10.4  | 10.4  | 10.4  | 10.4  | 10.4  | 10.4  | 10.4  | 10.3  | 10.4  | 10.3  | 10.3  | 10.4  | 10.4  | 10.4  | 10.4  | 0.0%      |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes petroleum coke, lubricants, and miscellaneous petroleum products.

3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 30. Iron and Steel Industries Energy Consumption (1 of 1)**

|   | 1999-  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 2020   |        |       |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Industry Output and Consumption 1/  | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   |       |
| Industry Output (billion 1992 dollars)  | 67.78  | 69.87  | 71.41  | 73.49  | 74.64  | 75.39  | 76.91  | 77.73  | 79.02  | 79.57  | 80.14  | 81.39  | 81.84  | 83.26  | 83.91  | 84.85  | 85.12  | 85.68  | 86.36  | 86.67  | 87.42  | 88.25  | 1.3%  |
| Energy Consumption (trillion Btu)   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| Residual Oil  | 41.3   | 38.7   | 40.9   | 40.8   | 39.8   | 38.4   | 38.4   | 38.1   | 38.0   | 37.7   | 37.2   | 37.1   | 36.6   | 36.6   | 36.4   | 36.3   | 36.0   | 35.9   | 35.9   | 35.8   | 35.9   | 36.2   | -0.6% |
| Other Petroleum 2/  | 60.1   | 61.0   | 61.0   | 61.3   | 60.9   | 60.0   | 60.1   | 59.6   | 59.6   | 58.9   | 58.3   | 58.4   | 57.7   | 57.9   | 57.5   | 57.4   | 56.6   | 56.2   | 55.9   | 55.4   | 55.3   | 55.3   | -0.4% |
| Petroleum Subtotal  | 101.3  | 99.7   | 101.9  | 102.1  | 100.6  | 98.5   | 98.6   | 97.7   | 97.6   | 96.6   | 95.5   | 95.5   | 94.3   | 94.5   | 93.9   | 93.7   | 92.7   | 92.1   | 91.8   | 91.2   | 91.2   | 91.5   | -0.5% |
| Natural Gas   | 451.4  | 450.8  | 449.4  | 457.5  | 461.8  | 463.6  | 466.5  | 466.6  | 468.6  | 467.8  | 467.5  | 470.0  | 469.5  | 473.0  | 473.4  | 475.1  | 474.1  | 474.2  | 474.9  | 474.2  | 475.2  | 476.3  | 0.3%  |
| Metallurgical Coal  | 774.0  | 759.4  | 745.1  | 731.1  | 717.3  | 703.8  | 690.5  | 677.5  | 664.8  | 652.2  | 640.0  | 627.9  | 616.1  | 604.5  | 593.1  | 581.9  | 570.9  | 560.2  | 549.6  | 539.3  | 529.1  | 519.1  | -1.9% |
| Net Coke Imports  | 47.4   | 62.4   | 74.1   | 88.8   | 98.0   | 105.1  | 116.6  | 124.0  | 134.1  | 139.9  | 146.0  | 155.9  | 161.2  | 172.1  | 178.6  | 186.7  | 191.0  | 196.9  | 203.5  | 208.2  | 215.3  | 222.8  | 7.6%  |
| Steam Coal  | 71.7   | 79.2   | 79.8   | 77.1   | 75.6   | 74.9   | 75.4   | 75.5   | 75.9   | 76.0   | 75.9   | 76.3   | 76.3   | 76.7   | 76.8   | 77.2   | 77.2   | 77.5   | 77.9   | 78.1   | 78.7   | 79.5   | 0.5%  |
| Coal Subtotal   | 893.2  | 901.1  | 899.0  | 897.0  | 890.9  | 883.8  | 882.6  | 877.0  | 874.8  | 868.1  | 861.8  | 860.1  | 853.6  | 853.2  | 848.5  | 845.8  | 839.2  | 834.6  | 831.1  | 825.6  | 823.0  | 821.5  | -0.4% |
| Purchased Electricity   | 143.0  | 149.3  | 152.2  | 156.0  | 157.2  | 157.8  | 160.6  | 161.8  | 164.2  | 164.9  | 165.7  | 167.9  | 168.4  | 171.1  | 172.1  | 173.7  | 173.8  | 174.7  | 175.7  | 176.1  | 177.5  | 179.1  | 1.1%  |
| Total   | 1588.9 | 1600.8 | 1602.5 | 1612.5 | 1610.5 | 1603.8 | 1608.3 | 1603.2 | 1605.2 | 1597.5 | 1590.5 | 1593.5 | 1585.8 | 1591.8 | 1587.9 | 1588.3 | 1579.8 | 1575.6 | 1573.5 | 1567.1 | 1567.0 | 1568.3 | -0.1% |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
| Residual Oil  | 0.61   | 0.55   | 0.57   | 0.55   | 0.53   | 0.51   | 0.50   | 0.49   | 0.48   | 0.47   | 0.46   | 0.46   | 0.45   | 0.44   | 0.43   | 0.43   | 0.42   | 0.42   | 0.42   | 0.41   | 0.41   | 0.41   | -1.9% |
| Other Petroleum 2/  | 0.89   | 0.87   | 0.85   | 0.83   | 0.82   | 0.80   | 0.78   | 0.77   | 0.75   | 0.74   | 0.73   | 0.72   | 0.70   | 0.70   | 0.69   | 0.68   | 0.67   | 0.66   | 0.65   | 0.64   | 0.63   | 0.63   | -1.6% |
| Petroleum Subtotal  | 1.49   | 1.43   | 1.43   | 1.39   | 1.35   | 1.31   | 1.28   | 1.26   | 1.24   | 1.21   | 1.19   | 1.17   | 1.15   | 1.14   | 1.12   | 1.10   | 1.09   | 1.08   | 1.06   | 1.05   | 1.04   | 1.04   | -1.7% |
| Natural Gas   | 6.66   | 6.45   | 6.29   | 6.22   | 6.19   | 6.15   | 6.07   | 6.00   | 5.93   | 5.88   | 5.83   | 5.77   | 5.74   | 5.68   | 5.64   | 5.60   | 5.57   | 5.53   | 5.50   | 5.47   | 5.44   | 5.40   | -1.0% |
| Metallurgical Coal  | 11.42  | 10.87  | 10.43  | 9.95   | 9.61   | 9.34   | 8.98   | 8.72   | 8.41   | 8.20   | 7.99   | 7.71   | 7.53   | 7.26   | 7.07   | 6.86   | 6.71   | 6.54   | 6.36   | 6.22   | 6.05   | 5.88   | -3.1% |
| Net Coke Imports  | 0.70   | 0.89   | 1.04   | 1.21   | 1.31   | 1.39   | 1.52   | 1.59   | 1.70   | 1.76   | 1.82   | 1.92   | 1.97   | 2.07   | 2.13   | 2.20   | 2.24   | 2.30   | 2.36   | 2.40   | 2.46   | 2.52   | 6.3%  |
| Steam Coal  | 1.06   | 1.13   | 1.12   | 1.05   | 1.01   | 0.99   | 0.98   | 0.97   | 0.96   | 0.95   | 0.95   | 0.94   | 0.93   | 0.92   | 0.92   | 0.91   | 0.91   | 0.90   | 0.90   | 0.90   | 0.90   | 0.90   | -0.8% |
| Coal Subtotal   | 13.18  | 12.90  | 12.59  | 12.21  | 11.94  | 11.72  | 11.48  | 11.28  | 11.07  | 10.91  | 10.75  | 10.57  | 10.43  | 10.25  | 10.11  | 9.97   | 9.86   | 9.74   | 9.62   | 9.53   | 9.41   | 9.31   | -1.6% |
| Purchased Electricity   | 2.11   | 2.14   | 2.13   | 2.12   | 2.11   | 2.09   | 2.09   | 2.08   | 2.08   | 2.07   | 2.07   | 2.06   | 2.06   | 2.05   | 2.05   | 2.05   | 2.04   | 2.04   | 2.04   | 2.03   | 2.03   | 2.03   | -0.2% |
| Total   | 23.44  | 22.91  | 22.44  | 21.94  | 21.58  | 21.27  | 20.91  | 20.62  | 20.31  | 20.08  | 19.85  | 19.58  | 19.38  | 19.12  | 18.92  | 18.72  | 18.56  | 18.39  | 18.22  | 18.08  | 17.92  | 17.77  | -1.3% |
| Carbon Dioxide Emissions 3/<br>(million metric tons carbon equivalent)            | 38.2   | 38.8   | 38.9   | 39.2   | 39.1   | 38.9   | 39.0   | 38.8   | 38.9   | 38.7   | 38.5   | 38.6   | 38.4   | 38.5   | 38.4   | 38.4   | 38.3   | 38.1   | 38.1   | 37.9   | 37.9   | 38.0   | 0.0%  |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes petroleum coke, lubricants, and miscellaneous petroleum products.

3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 31. Aluminum Industry Energy Consumption (1 of 1)**

|   | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 1999-2020 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| <b>Industry Output and Consumption 1/</b>   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Industry Output (billion 1992 dollars)  | 36.00 | 36.06 | 36.28 | 36.66 | 37.00 | 37.29 | 37.40 | 37.71 | 37.92 | 38.12 | 38.25 | 38.43 | 38.71 | 38.86 | 39.13 | 39.42 | 39.61 | 39.67 | 39.77 | 39.87 | 39.89 | 40.08 | 0.5%      |
| Energy Consumption (trillion Btu)   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Distillate Oil  | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | 0.1   | -0.3%     |
| Liquefied Petroleum Gas   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | -0.2%     |
| Petroleum Coke  | 14.0  | 13.9  | 13.9  | 13.9  | 13.9  | 13.9  | 13.8  | 13.8  | 13.7  | 13.7  | 13.6  | 13.6  | 13.6  | 13.6  | 13.6  | 13.6  | 13.5  | 13.5  | 13.4  | 13.4  | 13.3  | 13.3  | -0.3%     |
| Other Petroleum   | 30.3  | 30.1  | 30.0  | 30.1  | 30.1  | 30.1  | 30.0  | 30.1  | 30.0  | 30.0  | 29.9  | 29.8  | 29.9  | 29.8  | 29.8  | 29.9  | 29.9  | 29.8  | 29.7  | 29.6  | 29.5  | 29.5  | -0.1%     |
| Petroleum Subtotal  | 44.4  | 44.2  | 44.1  | 44.1  | 44.2  | 44.2  | 44.0  | 44.0  | 43.9  | 43.8  | 43.7  | 43.6  | 43.6  | 43.5  | 43.5  | 43.6  | 43.5  | 43.4  | 43.2  | 43.1  | 42.9  | 42.9  | -0.2%     |
| Natural Gas   | 79.8  | 79.3  | 79.0  | 79.1  | 79.1  | 79.0  | 78.6  | 78.6  | 78.4  | 78.2  | 77.9  | 77.7  | 77.7  | 77.5  | 77.5  | 77.5  | 77.4  | 77.0  | 76.8  | 76.5  | 76.2  | 76.1  | -0.2%     |
| Steam Coal  | 74.8  | 74.8  | 74.8  | 74.8  | 74.7  | 74.5  | 74.1  | 74.0  | 73.8  | 73.6  | 73.3  | 73.1  | 73.0  | 72.9  | 72.9  | 72.9  | 72.8  | 72.5  | 72.4  | 72.2  | 72.0  | 72.0  | -0.2%     |
| Purchased Electricity   | 208.8 | 207.2 | 206.4 | 206.6 | 206.7 | 206.6 | 205.7 | 205.7 | 205.4 | 205.0 | 204.3 | 203.8 | 203.9 | 203.4 | 203.5 | 203.7 | 203.4 | 202.6 | 202.0 | 201.5 | 200.6 | 200.4 | -0.2%     |
| Total   | 407.9 | 405.4 | 404.3 | 404.7 | 404.6 | 404.3 | 402.3 | 402.3 | 401.5 | 400.6 | 399.2 | 398.2 | 398.3 | 397.2 | 397.3 | 397.6 | 397.1 | 395.5 | 394.4 | 393.3 | 391.7 | 391.4 | -0.2%     |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |           |
| Distillate Oil  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | -0.8%     |
| Liquefied Petroleum Gas   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | -0.7%     |
| Petroleum Coke  | 0.39  | 0.39  | 0.38  | 0.38  | 0.38  | 0.37  | 0.37  | 0.37  | 0.36  | 0.36  | 0.36  | 0.35  | 0.35  | 0.35  | 0.35  | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.33  | 0.33  | -0.8%     |
| Other Petroleum   | 0.84  | 0.83  | 0.83  | 0.82  | 0.81  | 0.81  | 0.80  | 0.80  | 0.79  | 0.79  | 0.78  | 0.78  | 0.77  | 0.77  | 0.76  | 0.76  | 0.75  | 0.75  | 0.75  | 0.74  | 0.74  | 0.74  | -0.6%     |
| Petroleum Subtotal  | 1.23  | 1.22  | 1.21  | 1.20  | 1.19  | 1.18  | 1.18  | 1.17  | 1.16  | 1.15  | 1.14  | 1.13  | 1.13  | 1.12  | 1.11  | 1.11  | 1.10  | 1.09  | 1.09  | 1.08  | 1.08  | 1.07  | -0.7%     |
| Natural Gas   | 2.22  | 2.20  | 2.18  | 2.16  | 2.14  | 2.12  | 2.10  | 2.08  | 2.07  | 2.05  | 2.04  | 2.02  | 2.01  | 1.99  | 1.98  | 1.97  | 1.95  | 1.94  | 1.93  | 1.92  | 1.91  | 1.90  | -0.7%     |
| Steam Coal  | 2.08  | 2.07  | 2.06  | 2.04  | 2.02  | 2.00  | 1.98  | 1.96  | 1.95  | 1.93  | 1.92  | 1.90  | 1.89  | 1.87  | 1.86  | 1.85  | 1.84  | 1.83  | 1.82  | 1.81  | 1.80  | 1.80  | -0.7%     |
| Purchased Electricity   | 5.80  | 5.74  | 5.69  | 5.64  | 5.59  | 5.54  | 5.50  | 5.46  | 5.42  | 5.38  | 5.34  | 5.30  | 5.27  | 5.23  | 5.20  | 5.17  | 5.13  | 5.11  | 5.08  | 5.05  | 5.03  | 5.00  | -0.7%     |
| Total   | 11.33 | 11.24 | 11.14 | 11.04 | 10.94 | 10.84 | 10.76 | 10.67 | 10.59 | 10.51 | 10.44 | 10.36 | 10.29 | 10.22 | 10.15 | 10.08 | 10.02 | 9.97  | 9.92  | 9.87  | 9.82  | 9.77  | -0.7%     |
| Carbon Dioxide Emissions 2/<br>(million metric tons carbon equivalent)            | 14.1  | 14.1  | 14.2  | 14.2  | 14.2  | 14.1  | 14.0  | 13.9  | 13.8  | 13.7  | 13.6  | 13.5  | 13.5  | 13.4  | 13.4  | 13.4  | 13.4  | 13.3  | 13.3  | 13.2  | 13.2  | 13.1  | -0.4%     |

1/ Fuel consumption includes consumption for cogeneration.

2/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Btu = British thermal unit.

N/A = Not applicable.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.

**Table 32. Other Industrial Sector Energy Consumption (1 of 2)  
(Trillion Btu)**

| Industry Output and Consumption 1/  | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 1999-2020 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|
| <b>Agriculture</b>  |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |
| Distillate Oil  | 567.1   | 579.6   | 585.9   | 589.5   | 592.0   | 596.0   | 602.7   | 611.1   | 617.3   | 623.0   | 628.6   | 635.8   | 644.3   | 649.4   | 657.5   | 665.7   | 674.2   | 683.6   | 691.4   | 699.5   | 706.3   | 714.2   | 1.1%      |
| Liquefied Petroleum Gas   | 78.3    | 80.0    | 80.9    | 81.4    | 81.7    | 82.3    | 83.2    | 84.4    | 85.2    | 86.0    | 86.8    | 87.8    | 89.0    | 89.7    | 90.8    | 91.9    | 93.1    | 94.4    | 95.5    | 96.6    | 97.6    | 98.7    | 1.1%      |
| Motor Gasoline  | 92.9    | 95.0    | 96.0    | 96.6    | 97.0    | 97.7    | 98.8    | 100.1   | 101.1   | 102.1   | 103.0   | 104.2   | 105.6   | 106.4   | 107.8   | 109.1   | 110.5   | 112.0   | 113.3   | 114.6   | 115.7   | 117.0   | 1.1%      |
| Other Petroleum   | 16.5    | 16.9    | 17.1    | 17.2    | 17.3    | 17.4    | 17.6    | 17.8    | 18.0    | 18.2    | 18.3    | 18.5    | 18.8    | 18.9    | 19.2    | 19.4    | 19.6    | 19.9    | 20.1    | 20.4    | 20.6    | 20.8    | 1.1%      |
| Petroleum Subtotal  | 754.9   | 771.5   | 779.9   | 784.7   | 788.0   | 793.3   | 802.2   | 813.4   | 821.6   | 829.3   | 836.7   | 846.3   | 857.6   | 864.4   | 875.3   | 886.1   | 897.5   | 910.0   | 920.3   | 931.1   | 940.1   | 950.7   | 1.1%      |
| Natural Gas   | 52.7    | 53.8    | 54.3    | 54.5    | 54.7    | 55.0    | 55.5    | 56.2    | 56.7    | 57.2    | 57.6    | 58.2    | 58.9    | 59.3    | 59.9    | 60.6    | 61.3    | 62.1    | 62.7    | 63.4    | 63.9    | 64.6    | 1.0%      |
| Steam Coal  | 0.4     | 0.4     | 0.4     | 0.4     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | 0.3     | -1.8%     |
| Renewables  | 20.3    | 20.9    | 21.2    | 21.5    | 21.6    | 21.9    | 22.2    | 22.7    | 23.0    | 23.3    | 23.6    | 24.0    | 24.4    | 24.7    | 25.2    | 25.6    | 26.0    | 26.5    | 27.0    | 27.4    | 27.8    | 28.2    | 1.6%      |
| Purchased Electricity   | 135.3   | 138.3   | 139.8   | 140.6   | 141.2   | 142.1   | 143.7   | 145.7   | 147.2   | 148.5   | 149.8   | 151.5   | 153.6   | 154.8   | 156.7   | 158.6   | 160.7   | 162.9   | 164.7   | 166.7   | 168.3   | 170.1   | 1.1%      |
| Total   | 963.6   | 984.8   | 995.5   | 1001.6  | 1005.9  | 1012.6  | 1024.1  | 1038.4  | 1048.8  | 1058.6  | 1068.0  | 1080.2  | 1094.8  | 1103.5  | 1117.3  | 1131.2  | 1145.8  | 1161.7  | 1175.0  | 1188.9  | 1200.4  | 1213.9  | 1.1%      |
| Industry Output (billion 1992 dollars)  | 279.04  | 284.79  | 287.98  | 290.94  | 292.86  | 295.15  | 298.62  | 302.99  | 306.53  | 309.90  | 313.18  | 317.17  | 321.60  | 324.75  | 329.18  | 333.91  | 338.94  | 344.20  | 348.86  | 353.46  | 357.59  | 362.24  | 1.3%      |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) | 3.45    | 3.46    | 3.46    | 3.44    | 3.43    | 3.43    | 3.43    | 3.43    | 3.42    | 3.42    | 3.41    | 3.41    | 3.40    | 3.40    | 3.39    | 3.39    | 3.38    | 3.38    | 3.37    | 3.36    | 3.36    | 3.35    | -0.1%     |
| Carbon Dioxide Emissions 1/<br>(million metric tons carbon equivalent)            | 22.1    | 22.6    | 22.9    | 23.0    | 23.2    | 23.3    | 23.5    | 23.7    | 24.0    | 24.1    | 24.3    | 24.5    | 24.8    | 25.0    | 25.3    | 25.6    | 25.9    | 26.3    | 26.6    | 26.9    | 27.1    | 27.4    | 1.0%      |
| <b>Construction</b>   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |
| Distillate Oil  | 325.1   | 332.8   | 333.2   | 341.2   | 346.6   | 352.4   | 359.0   | 367.2   | 375.1   | 381.5   | 386.9   | 392.5   | 397.7   | 402.3   | 407.7   | 416.5   | 426.7   | 435.5   | 442.3   | 448.5   | 455.2   | 461.9   | 1.7%      |
| Motor Gasoline  | 140.8   | 144.2   | 144.3   | 147.8   | 150.2   | 152.7   | 155.5   | 159.1   | 162.5   | 165.3   | 167.6   | 170.0   | 172.3   | 174.3   | 176.6   | 180.4   | 184.9   | 188.7   | 191.6   | 194.3   | 197.2   | 200.1   | 1.7%      |
| Asphalt and Road Oil  | 1331.0  | 1361.6  | 1361.9  | 1393.3  | 1414.8  | 1438.0  | 1464.5  | 1497.9  | 1530.5  | 1557.1  | 1579.4  | 1602.6  | 1624.3  | 1643.3  | 1665.5  | 1701.3  | 1743.4  | 1780.3  | 1808.7  | 1834.6  | 1862.5  | 1891.5  | 1.7%      |
| Petroleum Subtotal  | 1796.9  | 1838.6  | 1839.4  | 1882.2  | 1911.6  | 1943.1  | 1979.0  | 2024.2  | 2068.1  | 2103.9  | 2133.9  | 2165.1  | 2194.3  | 2219.9  | 2249.9  | 2298.2  | 2355.0  | 2404.5  | 2442.6  | 2477.4  | 2514.9  | 2553.5  | 1.7%      |
| Natural Gas   | 194.1   | 198.7   | 198.9   | 203.7   | 207.0   | 210.4   | 214.4   | 219.3   | 224.0   | 227.8   | 231.0   | 234.3   | 237.5   | 240.2   | 243.5   | 248.7   | 254.8   | 260.1   | 264.1   | 267.8   | 271.8   | 275.8   | 1.7%      |
| Purchased Electricity   | 126.1   | 129.1   | 129.2   | 132.3   | 134.4   | 136.7   | 139.2   | 142.4   | 145.5   | 148.0   | 150.1   | 152.2   | 154.2   | 156.0   | 158.1   | 161.5   | 165.5   | 168.9   | 171.5   | 174.0   | 176.6   | 179.2   | 1.7%      |
| Total   | 2117.1  | 2166.3  | 2167.6  | 2218.2  | 2253.0  | 2290.2  | 2332.6  | 2385.9  | 2437.6  | 2479.8  | 2515.0  | 2551.6  | 2586.0  | 2616.1  | 2651.5  | 2708.5  | 2775.4  | 2833.5  | 2878.2  | 2919.1  | 2963.3  | 3008.5  | 1.7%      |
| Industry Output (billion 1992 dollars)  | 530.08  | 544.77  | 546.51  | 561.83  | 572.61  | 584.07  | 596.93  | 612.76  | 628.10  | 640.75  | 651.43  | 662.57  | 673.05  | 682.46  | 693.37  | 710.45  | 730.28  | 747.44  | 760.86  | 773.28  | 786.66  | 800.09  | 2.0%      |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) | 3.99    | 3.98    | 3.97    | 3.95    | 3.93    | 3.92    | 3.91    | 3.89    | 3.88    | 3.87    | 3.86    | 3.85    | 3.84    | 3.83    | 3.82    | 3.81    | 3.80    | 3.79    | 3.78    | 3.77    | 3.77    | 3.76    | -0.3%     |
| Carbon Dioxide Emissions 1/<br>(million metric tons carbon equivalent)            | 18.1    | 18.6    | 18.7    | 19.1    | 19.4    | 19.7    | 20.0    | 20.4    | 20.9    | 21.2    | 21.4    | 21.7    | 22.0    | 22.2    | 22.5    | 22.9    | 23.5    | 24.0    | 24.4    | 24.7    | 25.0    | 25.4    | 1.6%      |
| <b>Mining</b>   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |           |
| Residual Oil  | 25.3    | 25.3    | 25.7    | 26.2    | 26.5    | 26.6    | 26.8    | 27.0    | 27.2    | 27.4    | 27.5    | 27.6    | 27.8    | 27.9    | 28.1    | 28.3    | 28.6    | 28.8    | 29.0    | 29.2    | 29.3    | 29.5    | 0.7%      |
| Distillate Oil  | 174.9   | 174.9   | 177.2   | 181.1   | 183.1   | 184.0   | 185.2   | 186.2   | 187.8   | 188.9   | 189.6   | 190.9   | 191.7   | 192.7   | 194.1   | 195.7   | 197.3   | 198.8   | 200.4   | 201.4   | 202.4   | 203.9   | 0.7%      |
| Motor Gasoline  | 14.4    | 14.4    | 14.6    | 15.0    | 15.2    | 15.2    | 15.2    | 15.2    | 15.3    | 15.4    | 15.5    | 15.7    | 15.7    | 15.9    | 16.1    | 16.3    | 16.5    | 16.7    | 16.9    | 17.1    | 17.2    | 17.3    | 0.9%      |
| Other Petroleum   | 7.9     | 7.9     | 8.0     | 8.2     | 8.3     | 8.3     | 8.3     | 8.3     | 8.3     | 8.3     | 8.4     | 8.6     | 8.6     | 8.8     | 8.9     | 9.0     | 9.2     | 9.4     | 9.5     | 9.7     | 9.7     | 9.8     | 1.0%      |
| Petroleum Subtotal  | 222.6   | 222.6   | 225.4   | 230.5   | 233.2   | 234.2   | 235.5   | 236.6   | 238.5   | 239.9   | 240.9   | 242.7   | 243.8   | 245.3   | 247.3   | 249.4   | 251.6   | 253.7   | 255.8   | 257.3   | 258.6   | 260.6   | 0.8%      |
| Natural Gas   | 351.1   | 351.5   | 354.2   | 363.7   | 367.4   | 366.8   | 365.7   | 365.0   | 365.1   | 368.3   | 372.0   | 378.3   | 381.1   | 387.1   | 393.6   | 399.6   | 407.8   | 415.1   | 421.5   | 427.6   | 430.4   | 434.5   | 1.0%      |
| Lease and Plant Fuel  | 1267.00 | 1252.72 | 1267.65 | 1309.74 | 1348.73 | 1371.76 | 1384.82 | 1405.16 | 1421.89 | 1450.90 | 1483.90 | 1530.16 | 1561.60 | 1600.88 | 1641.11 | 1682.50 | 1728.19 | 1766.91 | 1803.33 | 1838.90 | 1862.47 | 1888.53 | 1.9%      |
| Steam Coal  | 83.5    | 83.7    | 84.7    | 85.6    | 88.1    | 88.7    | 89.5    | 90.2    | 90.9    | 91.4    | 91.8    | 92.2    | 92.6    | 92.8    | 93.3    | 94.0    | 94.5    | 95.0    | 95.5    | 95.8    | 96.3    | 96.9    | 0.7%      |
| Renewables  | 1.1     | 1.1     | 1.1     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.2     | 1.3     | 1.3     | 1.3     | 1.3     | 1.3     | 1.4     | 1.4     | 1.4     | 1.1%      |
| Purchased Electricity   | 279.1   | 279.4   | 282.7   | 288.6   | 291.9   | 292.7   | 293.9   | 295.0   | 296.8   | 298.7   | 300.3   | 303.1   | 304.8   | 307.1   | 310.1   | 313.5   | 317.1   | 320.5   | 323.6   | 326.1   | 327.9   | 330.6   | 0.8%      |
| Total   | 2204.5  | 2190.9  | 2215.8  | 2279.3  | 2330.5  | 2355.3  | 2370.4  | 2393.1  | 2414.4  | 2450.4  | 2490.1  | 2547.7  | 2585.1  | 2634.3  | 2686.6  | 2740.3  | 2800.5  | 2852.6  | 2901.2  | 2947.0  | 2977.0  | 3012.5  | 1.5%      |

**Table 32. Other Industrial Sector Energy Consumption (2 of 2)**  
(Trillion Btu)

|   | 1999          | 2000          | 2001          | 2002          | 2003          | 2004          | 2005          | 2006          | 2007          | 2008          | 2009          | 2010          | 2011          | 2012          | 2013          | 2014          | 2015          | 2016          | 2017          | 2018          | 2019          | 2020          | 1999-2020   |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------------|
| <b>Industry Output and Consumption 1/</b>   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Industry Output (billion 1992 dollars)  | 163.20        | 163.64        | 165.87        | 170.82        | 173.66        | 174.19        | 174.72        | 175.30        | 176.47        | 178.20        | 179.88        | 182.62        | 184.12        | 186.60        | 189.44        | 192.21        | 195.59        | 198.68        | 201.57        | 204.10        | 205.67        | 207.87        | 1.2%        |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) | 13.51         | 13.39         | 13.36         | 13.34         | 13.42         | 13.52         | 13.57         | 13.65         | 13.68         | 13.75         | 13.84         | 13.95         | 14.04         | 14.12         | 14.18         | 14.26         | 14.32         | 14.36         | 14.39         | 14.44         | 14.47         | 14.49         | 0.3%        |
| Carbon Dioxide Emissions 1/<br>(million metric tons carbon equivalent)            | 25.4          | 25.5          | 25.9          | 26.4          | 26.8          | 26.8          | 26.7          | 26.7          | 26.8          | 26.9          | 26.9          | 27.2          | 27.3          | 27.4          | 27.7          | 28.0          | 28.4          | 28.6          | 28.9          | 29.1          | 29.2          | 29.5          | 0.7%        |
| <b>Metal-Based Durables Consumption</b>   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Residual Oil  | 33.6          | 33.7          | 34.4          | 36.1          | 37.4          | 38.2          | 40.1          | 42.4          | 44.2          | 46.1          | 47.7          | 49.5          | 51.0          | 52.6          | 54.5          | 56.5          | 58.9          | 61.2          | 63.7          | 66.2          | 69.1          | 72.2          | 3.7%        |
| Distillate Oil  | 21.5          | 21.2          | 22.9          | 23.5          | 23.9          | 24.1          | 25.2          | 26.7          | 27.7          | 28.8          | 29.7          | 30.6          | 31.5          | 32.4          | 33.5          | 34.7          | 35.8          | 37.2          | 38.6          | 40.1          | 41.8          | 43.7          | 3.4%        |
| Liquefied Petroleum Gas   | 5.0           | 6.3           | 5.8           | 5.9           | 5.8           | 5.7           | 6.0           | 6.3           | 6.5           | 6.8           | 7.0           | 7.3           | 7.5           | 7.7           | 8.3           | 8.7           | 9.0           | 9.4           | 9.9           | 10.3          | 10.9          | 11.5          | 4.0%        |
| Petroleum Subtotal  | 60.2          | 61.2          | 63.0          | 65.4          | 67.1          | 68.0          | 71.4          | 75.4          | 78.5          | 81.7          | 84.4          | 87.4          | 90.0          | 92.8          | 96.4          | 99.9          | 103.8         | 107.8         | 112.2         | 116.6         | 121.8         | 127.5         | 3.6%        |
| Natural Gas   | 726.4         | 742.3         | 744.2         | 780.2         | 808.9         | 827.0         | 859.6         | 896.7         | 928.6         | 959.6         | 988.1         | 1019.8        | 1048.3        | 1077.1        | 1110.1        | 1145.5        | 1185.8        | 1221.5        | 1259.5        | 1299.0        | 1343.9        | 1390.0        | 3.1%        |
| Steam Coal  | 74.6          | 74.5          | 74.5          | 74.4          | 74.7          | 75.0          | 75.3          | 75.4          | 75.6          | 75.6          | 75.7          | 75.8          | 75.9          | 75.9          | 76.0          | 76.2          | 76.3          | 76.5          | 76.7          | 77.0          | 77.2          | 77.4          | 0.2%        |
| Renewables  | 35.6          | 37.0          | 37.7          | 40.1          | 41.9          | 43.2          | 45.5          | 48.0          | 50.3          | 52.6          | 54.7          | 57.1          | 59.3          | 61.6          | 64.1          | 66.8          | 69.8          | 72.5          | 75.5          | 78.6          | 82.1          | 85.7          | 4.3%        |
| Purchased Electricity   | 615.7         | 634.6         | 640.4         | 670.6         | 692.5         | 706.7         | 734.8         | 767.3         | 795.6         | 823.5         | 849.1         | 877.3         | 902.9         | 929.0         | 958.6         | 989.5         | 1024.5        | 1056.0        | 1089.7        | 1125.1        | 1165.5        | 1206.7        | 3.3%        |
| <b>Total</b>  | <b>1512.4</b> | <b>1549.7</b> | <b>1559.8</b> | <b>1630.7</b> | <b>1685.0</b> | <b>1720.0</b> | <b>1786.6</b> | <b>1862.8</b> | <b>1928.5</b> | <b>1993.0</b> | <b>2052.0</b> | <b>2117.4</b> | <b>2176.4</b> | <b>2236.4</b> | <b>2305.3</b> | <b>2377.9</b> | <b>2460.2</b> | <b>2534.4</b> | <b>2613.6</b> | <b>2696.3</b> | <b>2790.5</b> | <b>2887.3</b> | <b>3.1%</b> |
| <b>Industry Output and Consumption 1/</b>   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Industry Output (billion 1992 dollars)  | 1632.92       | 1692.42       | 1719.80       | 1825.18       | 1904.70       | 1960.80       | 2058.75       | 2170.16       | 2267.53       | 2365.85       | 2458.10       | 2559.91       | 2653.58       | 2749.74       | 2857.89       | 2970.48       | 3096.51       | 3211.71       | 3335.97       | 3466.79       | 3614.35       | 3764.73       | 4.1%        |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) | 0.93          | 0.92          | 0.91          | 0.89          | 0.88          | 0.88          | 0.87          | 0.86          | 0.85          | 0.84          | 0.83          | 0.83          | 0.82          | 0.81          | 0.81          | 0.80          | 0.79          | 0.79          | 0.78          | 0.78          | 0.77          | 0.77          | -0.9%       |
| Carbon Dioxide Emissions 1/<br>(million metric tons carbon equivalent)            | 43.9          | 45.3          | 45.9          | 47.9          | 49.5          | 50.4          | 52.0          | 53.8          | 55.8          | 57.3          | 58.7          | 60.5          | 62.0          | 63.5          | 65.5          | 67.4          | 69.8          | 71.7          | 74.1          | 76.2          | 78.7          | 81.4          | 3.0%        |
| <b>Other Manufacturing Consumption</b>  |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Residual Oil  | 86.3          | 86.2          | 87.9          | 88.2          | 88.2          | 88.0          | 89.5          | 91.1          | 92.5          | 93.8          | 94.7          | 96.0          | 97.0          | 97.8          | 99.3          | 100.9         | 102.8         | 104.7         | 106.7         | 108.6         | 110.7         | 113.3         | 1.3%        |
| Distillate Oil  | 90.3          | 90.3          | 98.2          | 97.1          | 96.7          | 95.7          | 97.4          | 99.8          | 100.8         | 102.4         | 103.2         | 104.4         | 105.8         | 106.7         | 108.3         | 110.1         | 111.4         | 113.7         | 115.8         | 117.9         | 120.1         | 123.1         | 1.5%        |
| Liquid Petroleum Gas  | 28.5          | 32.9          | 31.8          | 31.5          | 31.1          | 30.8          | 31.4          | 32.1          | 32.5          | 33.1          | 33.4          | 34.0          | 34.4          | 34.7          | 36.0          | 36.8          | 37.5          | 38.4          | 39.3          | 40.1          | 41.1          | 42.4          | 1.9%        |
| Petroleum Subtotal  | 205.1         | 209.4         | 217.9         | 216.8         | 216.0         | 214.5         | 218.3         | 222.9         | 225.8         | 229.3         | 231.4         | 234.4         | 237.1         | 239.2         | 243.5         | 247.8         | 251.6         | 256.8         | 261.8         | 266.7         | 271.9         | 278.8         | 1.5%        |
| Natural Gas   | 1257.2        | 1268.8        | 1268.1        | 1295.3        | 1318.4        | 1334.7        | 1352.9        | 1371.9        | 1389.5        | 1405.2        | 1420.3        | 1439.2        | 1454.8        | 1469.0        | 1488.8        | 1512.4        | 1538.6        | 1563.7        | 1587.1        | 1608.9        | 1631.8        | 1657.7        | 1.3%        |
| Steam Coal  | 160.8         | 162.1         | 162.5         | 163.8         | 165.0         | 165.9         | 167.2         | 168.6         | 169.8         | 171.0         | 172.0         | 173.3         | 174.4         | 175.4         | 176.8         | 178.4         | 180.1         | 181.9         | 183.5         | 185.1         | 186.8         | 188.7         | 0.8%        |
| Renewables  | 320.9         | 329.0         | 333.9         | 343.0         | 350.5         | 356.4         | 364.6         | 373.1         | 381.1         | 388.8         | 395.9         | 404.5         | 411.9         | 419.0         | 428.4         | 438.7         | 449.7         | 460.7         | 471.3         | 481.5         | 492.3         | 504.5         | 2.2%        |
| Purchased Electricity   | 779.8         | 796.9         | 802.3         | 814.6         | 823.7         | 829.9         | 841.7         | 854.3         | 866.0         | 876.7         | 886.2         | 898.2         | 908.1         | 917.2         | 930.2         | 945.0         | 961.0         | 977.0         | 992.0         | 1005.9        | 1020.9        | 1038.4        | 1.4%        |
| <b>Total</b>  | <b>2723.8</b> | <b>2766.2</b> | <b>2784.7</b> | <b>2833.4</b> | <b>2873.6</b> | <b>2901.4</b> | <b>2944.8</b> | <b>2990.8</b> | <b>3032.3</b> | <b>3071.0</b> | <b>3105.8</b> | <b>3149.6</b> | <b>3186.3</b> | <b>3219.8</b> | <b>3267.7</b> | <b>3322.3</b> | <b>3381.0</b> | <b>3440.1</b> | <b>3495.8</b> | <b>3548.1</b> | <b>3603.6</b> | <b>3668.1</b> | <b>1.4%</b> |
| <b>Industry Output and Consumption 1/</b>   |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |               |             |
| Industry Output (billion 1992 dollars)  | 1038.81       | 1063.07       | 1076.60       | 1103.73       | 1125.70       | 1142.22       | 1166.10       | 1191.10       | 1214.18       | 1236.12       | 1256.36       | 1280.84       | 1301.73       | 1321.65       | 1348.46       | 1378.15       | 1409.76       | 1441.41       | 1471.55       | 1500.40       | 1530.86       | 1565.73       | 2.0%        |
| Energy Consumption per Unit of Output<br>(thousand Btu per 1992 dollar of output) | 2.62          | 2.60          | 2.59          | 2.57          | 2.55          | 2.54          | 2.53          | 2.51          | 2.50          | 2.48          | 2.47          | 2.46          | 2.45          | 2.44          | 2.42          | 2.41          | 2.40          | 2.39          | 2.38          | 2.36          | 2.35          | 2.34          | -0.5%       |
| Carbon Dioxide Emissions 1/<br>(million metric tons carbon equivalent)            | 64.7          | 66.1          | 66.9          | 67.8          | 68.7          | 69.0          | 69.6          | 70.2          | 71.1          | 71.7          | 72.1          | 72.9          | 73.5          | 74.0          | 75.0          | 76.1          | 77.4          | 78.5          | 79.8          | 80.8          | 81.8          | 83.1          | 1.2%        |

1/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.

Note: Totals may not equal sum of components due to independent rounding. Data for 1999 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2001 National Energy Modeling System run AEO2001.D101600A.