

**Table C1. Total energy supply, disposition, and price summary**  
(quadrillion Btu per year, unless otherwise noted)

Supply, disposition, and prices	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Production</b>										
Crude oil and lease condensate.....	23.87	24.24	28.57	37.47	20.81	27.31	41.35	18.26	26.64	36.13
Natural gas plant liquids.....	6.58	6.90	7.90	9.22	6.68	7.92	10.07	6.59	8.05	10.10
Dry natural gas.....	35.14	35.57	39.28	41.58	37.79	41.39	48.05	41.09	44.58	51.90
Coal <sup>1</sup> .....	10.80	10.24	10.14	9.53	9.55	9.28	8.70	9.25	9.08	8.60
Nuclear / uranium <sup>2</sup> .....	8.21	6.85	6.59	6.67	6.48	6.22	6.31	6.11	6.21	6.29
Conventional hydroelectric power.....	2.53	2.45	2.43	2.42	2.37	2.36	2.33	2.31	2.29	2.26
Biomass <sup>3</sup> .....	4.47	4.83	4.89	5.13	4.99	5.00	5.61	5.22	5.39	6.42
Other renewable energy <sup>4</sup> .....	4.43	10.16	9.52	11.53	12.21	11.84	13.64	14.11	14.11	15.26
Other <sup>5</sup> .....	0.69	0.56	0.65	0.69	0.58	0.69	0.65	0.56	0.71	0.65
<b>Total.....</b>	<b>96.72</b>	<b>101.79</b>	<b>109.97</b>	<b>124.23</b>	<b>101.44</b>	<b>112.00</b>	<b>136.71</b>	<b>103.52</b>	<b>117.08</b>	<b>137.62</b>
<b>Imports</b>										
Crude oil.....	13.44	11.99	15.42	6.44	15.08	16.68	3.05	16.53	17.02	5.11
Petroleum and other liquids <sup>6</sup> .....	4.17	4.85	3.90	3.21	5.86	3.66	3.11	6.65	3.69	2.65
Natural gas.....	2.65	1.95	2.22	2.49	1.73	2.10	2.47	1.46	1.92	2.49
Other imports <sup>7</sup> .....	0.24	0.19	0.19	0.19	0.18	0.18	0.19	0.17	0.17	0.17
<b>Total.....</b>	<b>20.51</b>	<b>18.97</b>	<b>21.72</b>	<b>12.34</b>	<b>22.85</b>	<b>22.63</b>	<b>8.83</b>	<b>24.81</b>	<b>22.80</b>	<b>10.42</b>
<b>Exports</b>										
Petroleum and other liquids <sup>8</sup> .....	16.43	12.77	21.32	23.11	11.82	20.69	24.54	9.58	19.04	20.14
Natural gas.....	5.31	7.02	8.93	10.71	7.24	9.23	13.63	7.45	9.36	13.79
Coal.....	1.81	2.53	2.48	2.42	2.47	2.43	2.38	2.46	2.45	2.41
<b>Total.....</b>	<b>23.55</b>	<b>22.32</b>	<b>32.74</b>	<b>36.25</b>	<b>21.53</b>	<b>32.35</b>	<b>40.55</b>	<b>19.49</b>	<b>30.85</b>	<b>36.34</b>
<b>Discrepancy<sup>9</sup>.....</b>	<b>0.75</b>	<b>0.24</b>	<b>0.39</b>	<b>0.10</b>	<b>0.23</b>	<b>0.35</b>	<b>0.02</b>	<b>0.19</b>	<b>0.36</b>	<b>0.05</b>
<b>Consumption</b>										
Petroleum and other liquids <sup>10</sup> .....	33.55	37.63	36.88	36.09	39.09	37.39	36.31	41.11	39.08	37.59
Natural gas.....	31.89	30.09	32.12	32.88	31.90	33.86	36.40	34.67	36.70	40.09
Coal <sup>11</sup> .....	8.99	7.66	7.61	7.07	7.04	6.81	6.29	6.76	6.60	6.18
Nuclear / uranium <sup>2</sup> .....	8.21	6.85	6.59	6.67	6.48	6.22	6.31	6.11	6.21	6.29
Conventional hydroelectric power.....	2.53	2.45	2.43	2.42	2.37	2.36	2.33	2.31	2.29	2.26
Biomass <sup>12</sup> .....	3.05	3.07	3.12	3.26	3.17	3.18	3.41	3.30	3.40	3.73
Other renewable energy <sup>4</sup> .....	4.43	10.16	9.52	11.53	12.21	11.84	13.64	14.11	14.11	15.26
Other <sup>13</sup> .....	0.27	0.30	0.30	0.30	0.29	0.29	0.29	0.27	0.27	0.26
<b>Total.....</b>	<b>92.92</b>	<b>98.20</b>	<b>98.56</b>	<b>100.21</b>	<b>102.53</b>	<b>101.94</b>	<b>104.96</b>	<b>108.65</b>	<b>108.66</b>	<b>111.66</b>
<b>Prices (2020 dollars per unit)</b>										
Crude oil spot prices (dollars per barrel)										
Brent.....	41	37	73	136	43	87	155	48	95	173
West Texas Intermediate.....	39	35	71	132	41	84	148	46	91	168
Natural gas at Henry Hub (dollars per million Btu).....										
Coal (dollars per ton) at the minemouth <sup>14</sup> .....	2.07	3.40	3.34	3.59	3.53	3.55	3.85	3.65	3.69	4.04
Coal (dollars per million Btu) at the minemouth <sup>14</sup> .....	34.1	28.7	29.4	31.2	30.1	32.0	34.9	33.0	34.7	37.5
Average end-use <sup>15</sup> .....	1.68	1.41	1.45	1.52	1.47	1.55	1.66	1.59	1.66	1.77
Average electricity (cents per kilowatthour)...	2.12	1.91	1.97	2.04	1.92	1.98	2.07	1.95	2.01	2.12
	10.4	10.3	10.3	10.0	10.1	10.1	9.5	9.6	9.6	9.3

**Table C1. Total energy supply, disposition, and price summary (continued)**  
(quadrillion Btu per year, unless otherwise noted)

Supply, disposition, and prices	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Prices (nominal dollars per unit)</b>										
Crude oil spot prices (dollars per barrel)										
Brent.....	41	45	89	177	64	132	281	91	185	419
West Texas Intermediate .....	39	43	86	172	61	128	268	89	178	406
Natural gas at Henry Hub (dollars per million Btu) .....	2.07	4.11	4.08	4.69	5.27	5.40	6.96	6.96	7.21	9.78
Coal (dollars per ton) at the minemouth <sup>14</sup> .....	34.1	34.7	35.8	40.6	45.0	48.7	63.2	62.9	67.7	90.7
Coal (dollars per million Btu) at the minemouth <sup>14</sup> .....	1.68	1.71	1.77	1.98	2.20	2.36	3.00	3.04	3.25	4.29
Average end-use <sup>15</sup> .....	2.12	2.31	2.40	2.66	2.86	3.01	3.75	3.72	3.92	5.13
Average electricity (cents per kilowatthour)...	10.4	12.5	12.5	13.1	15.1	15.3	17.3	18.4	18.8	22.4

<sup>1</sup>Includes waste coal.  
<sup>2</sup>These values represent the energy obtained from uranium when it is used in light water reactors. The total energy content of uranium is much larger, but alternative processes are required to take advantage of it.  
<sup>3</sup>Includes grid-connected electricity from wood and wood waste; biomass, such as corn, used for liquid fuels production; and non-electric energy demand from wood. Refer to Table A17 for details.  
<sup>4</sup>Includes grid-connected electricity from landfill gas; biogenic municipal waste; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems. Excludes electricity imports using renewable sources and nonmarketed renewable energy. See Table A17 for selected nonmarketed residential and commercial renewable energy data.  
<sup>5</sup>Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.  
<sup>6</sup>Includes imports of finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.  
<sup>7</sup>Includes coal, coal coke (net), and electricity (net). Excludes imports of fuel used in nuclear power plants.  
<sup>8</sup>Includes crude oil, petroleum products, ethanol, and biodiesel.  
<sup>9</sup>Balancing item. Includes unaccounted for supply, losses, gains, and net storage withdrawals.  
<sup>10</sup>Estimated consumption. Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are hydrocarbon gas liquids and crude oil consumed as a fuel. Refer to Table A17 for detailed renewable liquid fuels consumption.  
<sup>11</sup>Excludes coal converted to coal-based synthetic liquids and natural gas.  
<sup>12</sup>Includes grid-connected electricity from wood and wood waste, non-electric energy from wood, and biofuels heat and coproducts used in the production of liquid fuels, but excludes the energy content of the liquid fuels.  
<sup>13</sup>Includes non-biogenic municipal waste, liquid hydrogen, and net electricity imports.  
<sup>14</sup>Includes reported prices for both open market and captive mines. Prices weighted by production, which differs from average minemouth prices published in EIA data reports where it is weighted by reported sales.  
<sup>15</sup>Prices weighted by consumption; weighted average excludes export free-alongside-ship (f.a.s.) prices.  
 Btu = British thermal unit.  
 Note: Totals may not equal sum of components due to independent rounding. Data for 2020 are model results and may differ from official EIA data reports.  
 Sources: 2020: Energy Information Administration (EIA), *Short-Term Energy Outlook*, October 2020 and EIA, AEO2021 National Energy Modeling System run ref2021.d113020a. Projections: EIA, AEO2021 National Energy Modeling System runs lowprice.d113020a, ref2021.d113020a, and highprice.d113020a.

**Table C2. Energy consumption by sector and source**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Energy consumption</b>										
<b>Residential</b>										
Propane .....	0.46	0.47	0.44	0.41	0.45	0.42	0.39	0.45	0.42	0.38
Distillate fuel oil <sup>1</sup> .....	0.43	0.39	0.37	0.35	0.34	0.32	0.30	0.30	0.28	0.25
Petroleum and other liquids subtotal.....	0.88	0.86	0.82	0.76	0.79	0.74	0.69	0.75	0.69	0.63
Natural gas .....	4.97	4.89	4.90	4.90	4.83	4.84	4.83	4.81	4.82	4.78
Renewable energy <sup>2</sup> .....	0.46	0.37	0.44	0.54	0.31	0.38	0.46	0.27	0.34	0.41
Electricity .....	5.05	5.27	5.26	5.29	5.69	5.67	5.72	6.19	6.18	6.13
<b>Delivered energy</b> .....	<b>11.36</b>	<b>11.39</b>	<b>11.42</b>	<b>11.49</b>	<b>11.63</b>	<b>11.64</b>	<b>11.69</b>	<b>12.02</b>	<b>12.03</b>	<b>11.96</b>
Electricity related losses .....	9.42	8.88	8.73	8.77	9.17	9.03	8.99	9.57	9.50	9.25
<b>Total</b> .....	<b>20.78</b>	<b>20.27</b>	<b>20.15</b>	<b>20.26</b>	<b>20.81</b>	<b>20.67</b>	<b>20.68</b>	<b>21.59</b>	<b>21.54</b>	<b>21.22</b>
<b>Commercial</b>										
Propane .....	0.17	0.19	0.18	0.18	0.20	0.20	0.20	0.22	0.22	0.22
Motor gasoline <sup>3</sup> .....	0.32	0.37	0.37	0.36	0.38	0.37	0.37	0.38	0.38	0.37
Kerosene .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Distillate fuel oil.....	0.31	0.35	0.32	0.28	0.33	0.30	0.26	0.32	0.28	0.24
Residual fuel oil.....	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Petroleum and other liquids subtotal.....	0.81	0.92	0.88	0.83	0.93	0.87	0.83	0.93	0.88	0.84
Natural gas .....	3.31	3.62	3.63	3.62	3.68	3.68	3.70	3.72	3.73	3.73
Coal .....	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Renewable energy <sup>4</sup> .....	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Electricity .....	4.34	4.76	4.76	4.81	5.04	5.04	5.14	5.62	5.62	5.71
<b>Delivered energy</b> .....	<b>8.60</b>	<b>9.45</b>	<b>9.41</b>	<b>9.41</b>	<b>9.79</b>	<b>9.74</b>	<b>9.81</b>	<b>10.42</b>	<b>10.38</b>	<b>10.43</b>
Electricity related losses .....	8.08	8.03	7.90	7.97	8.13	8.02	8.08	8.68	8.65	8.62
<b>Total</b> .....	<b>16.68</b>	<b>17.48</b>	<b>17.31</b>	<b>17.38</b>	<b>17.92</b>	<b>17.75</b>	<b>17.89</b>	<b>19.10</b>	<b>19.03</b>	<b>19.05</b>
<b>Industrial<sup>5</sup></b>										
Liquefied petroleum gases and other <sup>6</sup> .....	3.13	4.33	4.30	4.40	4.96	4.80	5.29	5.25	5.20	6.09
Motor gasoline <sup>3</sup> .....	0.24	0.30	0.30	0.31	0.34	0.34	0.35	0.38	0.39	0.39
Distillate fuel oil.....	1.13	1.39	1.38	1.39	1.58	1.55	1.56	1.81	1.80	1.77
Residual fuel oil.....	0.03	0.04	0.04	0.04	0.05	0.04	0.04	0.05	0.04	0.04
Petrochemical feedstocks .....	0.58	0.64	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.67
Other petroleum <sup>7</sup> .....	3.21	3.53	3.42	3.15	3.77	3.62	3.17	3.98	3.82	3.26
Petroleum and other liquids subtotal.....	8.33	10.23	10.09	9.94	11.34	11.02	11.07	12.13	11.91	12.23
Natural gas .....	8.48	8.67	9.37	10.13	9.51	10.12	11.11	10.46	11.22	12.45
Natural-gas-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and plant fuel <sup>8</sup> .....	1.87	1.94	2.13	2.40	2.02	2.29	2.85	2.10	2.44	2.92
Natural gas to liquefy gas for export <sup>9</sup> .....	0.36	0.44	0.77	1.11	0.43	0.78	1.55	0.44	0.78	1.56
Natural gas subtotal.....	10.71	11.06	12.26	13.64	11.96	13.20	15.51	13.01	14.44	16.93
Metallurgical coal .....	0.47	0.42	0.41	0.43	0.42	0.39	0.44	0.44	0.41	0.51
Other industrial coal.....	0.49	0.44	0.44	0.46	0.42	0.42	0.46	0.46	0.47	0.52
Coal-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net coal coke imports .....	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Coal subtotal.....	0.93	0.83	0.83	0.86	0.83	0.79	0.89	0.88	0.86	1.01
Biofuels heat and coproducts.....	0.90	0.92	0.90	0.89	1.00	0.96	0.93	1.04	1.06	1.02
Renewable energy <sup>10</sup> .....	1.53	1.62	1.62	1.68	1.70	1.69	1.86	1.84	1.87	2.16
Electricity .....	3.07	3.49	3.51	3.62	3.77	3.73	3.98	4.01	4.02	4.36
<b>Delivered energy</b> .....	<b>25.47</b>	<b>28.15</b>	<b>29.22</b>	<b>30.64</b>	<b>30.60</b>	<b>31.38</b>	<b>34.24</b>	<b>32.91</b>	<b>34.16</b>	<b>37.71</b>
Electricity related losses .....	5.72	5.88	5.83	6.00	6.07	5.93	6.26	6.20	6.18	6.58
<b>Total</b> .....	<b>31.18</b>	<b>34.04</b>	<b>35.06</b>	<b>36.65</b>	<b>36.67</b>	<b>37.31</b>	<b>40.50</b>	<b>39.11</b>	<b>40.34</b>	<b>44.30</b>

**Table C2. Energy consumption by sector and source (continued)**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Transportation</b>										
Propane .....	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Motor gasoline <sup>3</sup> .....	14.83	15.20	14.80	14.39	15.25	14.33	13.48	15.85	14.58	13.21
of which: E85 <sup>11</sup> .....	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.02
Jet fuel <sup>12</sup> .....	2.24	3.61	3.63	3.73	4.05	4.06	4.16	4.46	4.54	4.62
Distillate fuel oil <sup>13</sup> .....	6.15	6.33	6.24	6.27	6.28	6.02	5.97	6.57	6.21	6.00
Residual fuel oil .....	0.43	0.63	0.61	0.27	0.64	0.52	0.20	0.66	0.47	0.18
Other petroleum <sup>14</sup> .....	0.14	0.15	0.15	0.15	0.15	0.15	0.14	0.15	0.15	0.14
Petroleum and other liquids subtotal .....	23.79	25.92	25.43	24.81	26.38	25.09	23.97	27.69	25.96	24.17
Pipeline and distribution fuel natural gas ...	0.71	0.59	0.61	0.71	0.59	0.65	0.81	0.62	0.71	0.89
Compressed / liquefied natural gas .....	0.09	0.08	0.16	0.44	0.07	0.29	0.68	0.07	0.45	0.99
Liquid hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity .....	0.04	0.09	0.10	0.12	0.20	0.23	0.29	0.35	0.41	0.54
<b>Delivered energy</b> .....	<b>24.62</b>	<b>26.68</b>	<b>26.31</b>	<b>26.07</b>	<b>27.24</b>	<b>26.26</b>	<b>25.75</b>	<b>28.75</b>	<b>27.54</b>	<b>26.60</b>
Electricity related losses .....	0.07	0.15	0.16	0.20	0.32	0.36	0.46	0.55	0.64	0.82
<b>Total</b> .....	<b>24.69</b>	<b>26.84</b>	<b>26.47</b>	<b>26.27</b>	<b>27.57</b>	<b>26.62</b>	<b>26.21</b>	<b>29.29</b>	<b>28.18</b>	<b>27.42</b>
<b>Unspecified sector<sup>15</sup></b> .....	<b>-0.41</b>	<b>-0.43</b>	<b>-0.42</b>	<b>-0.34</b>	<b>-0.43</b>	<b>-0.41</b>	<b>-0.33</b>	<b>-0.45</b>	<b>-0.42</b>	<b>-0.33</b>
<b>Delivered energy consumption for all sectors</b>										
Liquefied petroleum gases and other <sup>6</sup> .....	3.76	4.98	4.94	5.00	5.62	5.44	5.89	5.93	5.84	6.70
Motor gasoline <sup>3</sup> .....	15.23	15.71	15.32	14.99	15.80	14.89	14.13	16.45	15.19	13.91
of which: E85 <sup>11</sup> .....	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.02
Jet fuel <sup>12</sup> .....	2.23	3.60	3.62	3.72	4.04	4.05	4.15	4.45	4.53	4.61
Kerosene <sup>16</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Distillate fuel oil <sup>1</sup> .....	7.77	8.21	8.06	8.04	8.28	7.94	7.85	8.72	8.31	8.02
Residual fuel oil .....	0.46	0.68	0.65	0.31	0.70	0.56	0.25	0.71	0.52	0.22
Petrochemical feedstocks .....	0.58	0.64	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.67
Other petroleum <sup>17</sup> .....	3.35	3.68	3.57	3.30	3.92	3.77	3.31	4.13	3.97	3.40
Petroleum and other liquids subtotal .....	33.40	37.50	36.80	36.00	39.01	37.31	36.24	41.05	39.02	37.54
Natural gas .....	16.85	17.27	18.07	19.09	18.10	18.93	20.31	19.07	20.22	21.96
Natural-gas-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and plant fuel <sup>8</sup> .....	1.87	1.94	2.13	2.40	2.02	2.29	2.85	2.10	2.44	2.92
Natural gas to liquefy gas for export <sup>9</sup> .....	0.36	0.44	0.77	1.11	0.43	0.78	1.55	0.44	0.78	1.56
Pipeline and distribution fuel natural gas ...	0.71	0.59	0.61	0.71	0.59	0.65	0.81	0.62	0.71	0.89
Natural gas subtotal .....	19.78	20.24	21.57	23.31	21.14	22.66	25.51	22.24	24.16	27.33
Metallurgical coal .....	0.47	0.42	0.41	0.43	0.42	0.39	0.44	0.44	0.41	0.51
Other coal .....	0.50	0.45	0.46	0.47	0.44	0.44	0.48	0.47	0.48	0.53
Coal-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net coal coke imports .....	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Coal subtotal .....	0.95	0.85	0.84	0.88	0.84	0.81	0.90	0.89	0.87	1.03
Biofuels heat and coproducts .....	0.90	0.92	0.90	0.89	1.00	0.96	0.93	1.04	1.06	1.02
Renewable energy <sup>18</sup> .....	2.12	2.12	2.19	2.35	2.14	2.20	2.45	2.24	2.34	2.70
Liquid hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity .....	12.49	13.61	13.63	13.84	14.70	14.67	15.13	16.18	16.24	16.76
<b>Delivered energy</b> .....	<b>69.64</b>	<b>75.25</b>	<b>75.94</b>	<b>77.27</b>	<b>78.84</b>	<b>78.60</b>	<b>81.17</b>	<b>83.65</b>	<b>83.69</b>	<b>86.38</b>
Electricity related losses .....	23.28	22.95	22.63	22.94	23.70	23.34	23.79	25.00	24.98	25.28
<b>Total</b> .....	<b>92.92</b>	<b>98.20</b>	<b>98.56</b>	<b>100.21</b>	<b>102.53</b>	<b>101.94</b>	<b>104.96</b>	<b>108.65</b>	<b>108.66</b>	<b>111.66</b>
<b>Electric power<sup>19</sup></b>										
Distillate fuel oil .....	0.07	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04
Residual fuel oil .....	0.08	0.07	0.03	0.03	0.04	0.03	0.03	0.02	0.02	0.02
Petroleum and other liquids subtotal .....	0.15	0.13	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.06
Natural gas .....	12.11	9.85	10.55	9.58	10.76	11.20	10.89	12.43	12.54	12.76
Steam coal .....	8.04	6.81	6.77	6.19	6.19	6.00	5.39	5.87	5.73	5.16
Nuclear / uranium <sup>20</sup> .....	8.21	6.85	6.59	6.67	6.48	6.22	6.31	6.11	6.21	6.29
Renewable energy <sup>21</sup> .....	6.99	12.64	11.97	13.97	14.61	14.22	15.99	16.43	16.41	17.52
Non-biogenic municipal waste .....	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Electricity imports .....	0.16	0.18	0.18	0.18	0.17	0.17	0.17	0.15	0.15	0.14
<b>Total</b> .....	<b>35.77</b>	<b>36.57</b>	<b>36.26</b>	<b>36.78</b>	<b>38.40</b>	<b>38.00</b>	<b>38.92</b>	<b>41.18</b>	<b>41.21</b>	<b>42.03</b>

**Table C2. Energy consumption by sector and source (continued)**  
(quadrillion Btu per year, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Total energy consumption</b>										
Liquefied petroleum gases and other <sup>6</sup> .....	3.76	4.98	4.94	5.00	5.62	5.44	5.89	5.93	5.84	6.70
Motor gasoline <sup>3</sup> .....	15.23	15.71	15.32	14.99	15.80	14.89	14.13	16.45	15.19	13.91
of which: E85 <sup>11</sup> .....	0.03	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.02
Jet fuel <sup>12</sup> .....	2.23	3.60	3.62	3.72	4.04	4.05	4.15	4.45	4.53	4.61
Kerosene <sup>16</sup> .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Distillate fuel oil <sup>1</sup> .....	7.84	8.26	8.11	8.09	8.32	7.99	7.89	8.77	8.35	8.06
Residual fuel oil .....	0.54	0.75	0.68	0.34	0.73	0.59	0.28	0.73	0.53	0.24
Petrochemical feedstocks .....	0.58	0.64	0.65	0.65	0.65	0.66	0.66	0.66	0.66	0.67
Other petroleum <sup>17</sup> .....	3.35	3.68	3.57	3.30	3.92	3.77	3.31	4.13	3.97	3.40
Petroleum and other liquids subtotal .....	33.55	37.63	36.88	36.09	39.09	37.39	36.31	41.11	39.08	37.59
Natural gas .....	28.96	27.11	28.61	28.66	28.86	30.14	31.19	31.51	32.76	34.72
Natural-gas-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and plant fuel <sup>8</sup> .....	1.87	1.94	2.13	2.40	2.02	2.29	2.85	2.10	2.44	2.92
Natural gas to liquefy gas for export <sup>9</sup> .....	0.36	0.44	0.77	1.11	0.43	0.78	1.55	0.44	0.78	1.56
Pipeline and distribution fuel natural gas ...	0.71	0.59	0.61	0.71	0.59	0.65	0.81	0.62	0.71	0.89
Natural gas subtotal .....	31.89	30.09	32.12	32.88	31.90	33.86	36.40	34.67	36.70	40.09
Metallurgical coal .....	0.47	0.42	0.41	0.43	0.42	0.39	0.44	0.44	0.41	0.51
Other coal .....	8.54	7.26	7.23	6.66	6.63	6.44	5.87	6.34	6.21	5.69
Coal-to-liquids heat and power .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net coal coke imports .....	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Coal subtotal .....	8.99	7.66	7.61	7.07	7.04	6.81	6.29	6.76	6.60	6.18
Nuclear / uranium <sup>20</sup> .....	8.21	6.85	6.59	6.67	6.48	6.22	6.31	6.11	6.21	6.29
Biofuels heat and coproducts .....	0.90	0.92	0.90	0.89	1.00	0.96	0.93	1.04	1.06	1.02
Renewable energy <sup>22</sup> .....	9.11	14.76	14.17	16.32	16.75	16.42	18.44	18.68	18.75	20.23
Liquid hydrogen .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-biogenic municipal waste .....	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Electricity imports .....	0.16	0.18	0.18	0.18	0.17	0.17	0.17	0.15	0.15	0.14
<b>Total .....</b>	<b>92.92</b>	<b>98.20</b>	<b>98.56</b>	<b>100.21</b>	<b>102.53</b>	<b>101.94</b>	<b>104.96</b>	<b>108.65</b>	<b>108.66</b>	<b>111.66</b>
<b>Energy use and related statistics</b>										
Delivered energy use .....	69.64	75.25	75.94	77.27	78.84	78.60	81.17	83.65	83.69	86.38
Total energy use .....	92.92	98.20	98.56	100.21	102.53	101.94	104.96	108.65	108.66	111.66
Ethanol consumed in motor gasoline and E85 ..	1.08	1.20	1.17	1.14	1.28	1.20	1.14	1.38	1.27	1.16
Population (millions) .....	330.41	352.60	352.60	352.60	370.87	370.87	370.87	386.16	386.16	386.16
Gross domestic product (billion 2012 dollars) ..	18,171	23,263	23,289	23,887	28,409	28,371	29,035	34,055	34,365	35,011
Carbon dioxide emissions (million metric tons)	4,563	4,532	4,584	4,512	4,629	4,596	4,568	4,865	4,807	4,764

<sup>1</sup>Includes residential use of kerosene.  
<sup>2</sup>Includes wood used for residential heating. See Table A4 and/or Table A17 for estimates of nonmarketed renewable energy consumption for geothermal heat pumps, solar thermal water heating, and electricity generation from wind and solar photovoltaic sources.  
<sup>3</sup>Includes ethanol and ethers blended into gasoline.  
<sup>4</sup>Excludes ethanol. Includes commercial sector consumption of wood and wood waste, landfill gas, municipal waste, and other biomass for combined heat and power. See Table A5 and/or Table A17 for estimates of nonmarketed renewable energy consumption for solar thermal water heating and electricity generation from wind and solar photovoltaic sources.  
<sup>5</sup>Includes energy for combined heat and power plants that have a non-regulatory status, and small on-site generating systems.  
<sup>6</sup>Includes ethane, natural gasoline, and refinery olefins.  
<sup>7</sup>Includes petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.  
<sup>8</sup>Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.  
<sup>9</sup>Fuel used in facilities that liquefy natural gas for export.  
<sup>10</sup>Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources. Excludes ethanol in motor gasoline.  
<sup>11</sup>E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for these projections.  
<sup>12</sup>Includes only kerosene type.  
<sup>13</sup>Diesel fuel for on- and off- road use.  
<sup>14</sup>Includes aviation gasoline and lubricants.  
<sup>15</sup>Represents consumption unattributed to the sectors above.  
<sup>16</sup>Does not include residential use of kerosene.  
<sup>17</sup>Includes aviation gasoline, petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.  
<sup>18</sup>Includes electricity generated for sale to the grid and for own use from renewable sources, and non-electric energy from renewable sources. Excludes ethanol and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal water heaters.  
<sup>19</sup>Includes consumption of energy by electricity-only and combined heat and power plants that have a regulatory status.  
<sup>20</sup>These values represent the energy obtained from uranium when it is used in light water reactors. The total energy content of uranium is much larger, but alternative processes are required to take advantage of it.  
<sup>21</sup>Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes net electricity imports.  
<sup>22</sup>Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes ethanol, net electricity imports, and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal water heaters.  
Btu = British thermal unit.  
Note: Includes estimated consumption for petroleum and other liquids. Totals may not equal sum of components due to independent rounding. Data for 2020 are model results and may differ from official EIA data reports.

**Sources:** 2020: Energy Information Administration (EIA), *Short-Term Energy Outlook*, October 2020 and EIA, AEO2021 National Energy Modeling System run ref2021.d113020a. **Projections:** EIA, AEO2021 National Energy Modeling System runs lowprice.d113020a, ref2021.d113020a, and highprice.d113020a.

**Table C3. Energy prices by sector and source**  
(2020 dollars per million Btu, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil Price	Reference	High oil price
<b>Residential</b>										
Propane .....	17.30	16.48	21.30	29.61	18.55	24.16	32.37	20.02	26.16	35.16
Distillate fuel oil .....	17.75	18.42	24.85	35.58	18.92	26.68	39.19	19.28	27.80	41.54
Natural gas.....	10.14	11.07	10.99	11.20	11.47	11.44	11.58	11.75	11.76	11.97
Electricity.....	35.77	36.61	36.54	35.69	36.23	36.14	34.45	34.97	34.96	34.04
<b>Commercial</b>										
Propane .....	12.77	13.65	17.34	23.40	15.11	19.30	25.11	16.24	20.63	27.05
Distillate fuel oil .....	17.83	13.72	20.21	30.98	14.31	22.10	34.64	14.72	23.27	37.02
Residual fuel oil.....	5.25	6.10	11.26	21.00	7.01	13.35	24.17	7.83	14.49	26.44
Natural gas.....	7.23	8.27	8.20	8.40	8.47	8.45	8.61	8.66	8.69	8.90
Electricity.....	31.33	30.84	30.75	29.93	29.76	29.63	28.06	27.85	27.80	26.74
<b>Industrial<sup>1</sup></b>										
Propane .....	7.62	8.34	11.85	18.33	9.65	13.83	20.28	10.74	15.24	22.61
Distillate fuel oil .....	17.75	13.49	19.96	30.65	14.08	21.81	34.34	14.49	23.01	36.77
Residual fuel oil.....	5.42	7.66	13.19	22.92	8.47	15.14	26.11	9.24	16.42	28.27
Natural gas <sup>2</sup> .....	3.06	4.27	4.20	4.39	4.41	4.36	4.53	4.49	4.48	4.69
Metallurgical coal .....	4.02	3.06	3.11	3.19	3.39	3.45	3.55	3.77	3.83	3.96
Other industrial coal .....	2.82	2.78	2.87	2.96	2.81	2.90	3.02	2.86	2.96	3.11
Coal to liquids .....	--	--	--	--	--	--	--	--	--	--
Electricity.....	20.71	19.62	19.56	19.25	19.02	18.98	18.14	18.08	18.06	17.45
<b>Transportation</b>										
Propane .....	11.99	13.17	16.35	21.41	14.43	18.01	22.83	15.39	19.10	24.41
E85 <sup>3</sup> .....	21.06	19.83	27.14	40.35	21.17	30.51	43.22	22.86	31.85	46.40
Motor gasoline <sup>4</sup> .....	18.75	17.15	23.28	34.29	18.17	25.94	36.55	18.69	26.99	39.10
Jet fuel <sup>5</sup> .....	9.57	9.72	16.44	27.41	10.85	18.93	31.64	11.86	20.52	34.34
Diesel fuel (distillate fuel oil) <sup>6</sup> .....	18.33	17.58	23.95	34.43	18.11	25.75	38.16	18.41	26.90	40.62
Residual fuel oil.....	9.21	8.02	11.72	23.06	8.39	14.33	26.13	8.43	16.23	28.17
Natural gas <sup>7</sup> .....	13.01	14.95	12.76	12.65	14.81	11.58	12.15	14.42	11.35	12.10
Electricity.....	34.84	34.91	34.84	34.39	34.50	34.53	33.01	32.76	32.72	31.69
<b>Electric power<sup>8</sup></b>										
Distillate fuel oil .....	17.71	12.43	19.12	30.39	13.05	21.08	33.79	13.81	22.38	36.13
Residual fuel oil.....	8.29	5.45	14.67	24.17	8.34	16.38	27.18	8.79	16.94	28.54
Natural gas.....	2.45	3.65	3.61	3.74	3.75	3.77	3.86	3.84	3.90	4.04
Steam coal.....	1.96	1.78	1.83	1.88	1.74	1.81	1.85	1.73	1.79	1.82
Uranium .....	0.69	0.70	0.70	0.70	0.72	0.72	0.72	0.74	0.74	0.74
<b>Average price to all users<sup>9</sup></b>										
Propane .....	14.35	13.53	17.97	25.22	15.05	20.11	27.11	16.09	21.47	29.14
E85 <sup>3</sup> .....	21.06	19.83	27.14	40.35	21.17	30.51	43.22	22.86	31.85	46.40
Motor gasoline <sup>4</sup> .....	18.74	17.15	23.28	34.30	18.18	25.94	36.56	18.70	27.00	39.11
Jet fuel <sup>5</sup> .....	9.57	9.72	16.44	27.41	10.85	18.93	31.64	11.86	20.52	34.34
Distillate fuel oil .....	18.18	16.71	23.11	33.66	17.18	24.83	37.25	17.44	25.92	39.60
Residual fuel oil.....	8.84	7.74	11.94	23.14	8.38	14.47	26.22	8.49	16.26	28.20
Natural gas.....	4.53	5.84	5.70	5.97	5.89	5.85	6.04	5.86	5.90	6.12
Metallurgical coal .....	4.02	3.06	3.11	3.19	3.39	3.45	3.55	3.77	3.83	3.96
Other coal .....	2.02	1.85	1.91	1.97	1.82	1.89	1.96	1.83	1.89	1.96
Coal to liquids .....	--	--	--	--	--	--	--	--	--	--
Electricity.....	30.53	30.22	30.13	29.38	29.58	29.52	27.96	28.26	28.24	27.16
<b>Non-renewable energy expenditures by sector (billion 2020 dollars)</b>										
Residential .....	247	262	265	268	277	279	277	288	291	290
Commercial.....	173	191	195	200	196	201	204	205	210	216
Industrial <sup>1</sup> .....	152	178	215	286	205	250	342	228	285	405
Transportation.....	412	410	558	819	442	614	867	481	671	945
Total non-renewable expenditures.....	984	1,041	1,232	1,574	1,120	1,345	1,690	1,202	1,458	1,856
Transportation renewable expenditures.....	1	1	1	1	1	1	1	1	1	1
<b>Total expenditures .....</b>	<b>985</b>	<b>1,042</b>	<b>1,233</b>	<b>1,575</b>	<b>1,121</b>	<b>1,345</b>	<b>1,691</b>	<b>1,202</b>	<b>1,459</b>	<b>1,857</b>

**Table C3. Energy prices by sector and source (continued)**  
(nominal dollars per million Btu, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Residential</b>										
Propane .....	17.30	19.96	26.00	38.62	27.71	36.74	58.56	38.17	51.08	85.09
Distillate fuel oil .....	17.75	22.30	30.32	46.41	28.25	40.58	70.89	36.76	54.29	100.53
Natural gas.....	10.14	13.40	13.41	14.61	17.13	17.40	20.96	22.39	22.96	28.95
Electricity.....	35.77	44.32	44.59	46.56	54.12	54.96	62.32	66.67	68.26	82.39
<b>Commercial</b>										
Propane .....	12.77	16.52	21.16	30.52	22.57	29.36	45.43	30.95	40.29	65.46
Distillate fuel oil .....	17.83	16.60	24.66	40.41	21.37	33.61	62.67	28.06	45.44	89.59
Residual fuel oil.....	5.25	7.39	13.74	27.40	10.46	20.31	43.73	14.93	28.29	63.99
Natural gas.....	7.23	10.01	10.00	10.96	12.66	12.85	15.58	16.51	16.96	21.54
Electricity.....	31.33	37.34	37.52	39.05	44.45	45.07	50.76	53.09	54.28	64.71
<b>Industrial<sup>1</sup></b>										
Propane .....	7.62	10.10	14.46	23.91	14.42	21.03	36.68	20.48	29.75	54.71
Distillate fuel oil .....	17.75	16.34	24.35	39.98	21.03	33.17	62.13	27.61	44.94	88.99
Residual fuel oil.....	5.42	9.27	16.10	29.89	12.65	23.02	47.23	17.62	32.06	68.41
Natural gas <sup>2</sup> .....	3.06	5.17	5.12	5.73	6.59	6.64	8.19	8.56	8.75	11.35
Metallurgical coal .....	4.02	3.70	3.80	4.16	5.06	5.24	6.42	7.18	7.49	9.57
Other industrial coal .....	2.82	3.37	3.50	3.87	4.20	4.41	5.45	5.45	5.79	7.52
Coal to liquids .....	--	--	--	--	--	--	--	--	--	--
Electricity.....	20.71	23.75	23.87	25.11	28.41	28.86	32.81	34.47	35.26	42.22
<b>Transportation</b>										
Propane .....	11.99	15.95	19.95	27.93	21.55	27.39	41.30	29.33	37.29	59.07
E85 <sup>3</sup> .....	21.06	24.01	33.12	52.63	31.62	46.40	78.19	43.58	62.20	112.28
Motor gasoline <sup>4</sup> .....	18.75	20.76	28.40	44.73	27.15	39.44	66.12	35.62	52.70	94.62
Jet fuel <sup>5</sup> .....	9.57	11.77	20.07	35.76	16.21	28.79	57.24	22.61	40.06	83.11
Diesel fuel (distillate fuel oil) <sup>6</sup> .....	18.33	21.28	29.22	44.91	27.05	39.16	69.04	35.09	52.53	98.30
Residual fuel oil.....	9.21	9.71	14.30	30.08	12.54	21.80	47.27	16.08	31.69	68.18
Natural gas <sup>7</sup> .....	13.01	18.10	15.57	16.50	22.12	17.61	21.98	27.48	22.16	29.29
Electricity.....	34.84	42.26	42.52	44.86	51.53	52.51	59.73	62.46	63.89	76.69
<b>Electric power<sup>8</sup></b>										
Distillate fuel oil .....	17.71	15.04	23.34	39.64	19.49	32.07	61.13	26.32	43.71	87.44
Residual fuel oil.....	8.29	6.60	17.91	31.52	12.46	24.91	49.16	16.75	33.08	69.07
Natural gas.....	2.45	4.41	4.41	4.88	5.60	5.74	6.98	7.31	7.62	9.78
Steam coal .....	1.96	2.15	2.23	2.45	2.60	2.75	3.35	3.31	3.49	4.42
Uranium .....	0.69	0.85	0.86	0.91	1.07	1.09	1.30	1.41	1.44	1.79

**Table C3. Energy prices by sector and source (continued)**  
(nominal dollars per million Btu, unless otherwise noted)

Sector and source	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Average price to all users<sup>9</sup></b>										
Propane .....	14.35	16.38	21.92	32.90	22.47	30.58	49.05	30.67	41.93	70.52
E85 <sup>3</sup> .....	21.06	24.01	33.12	52.63	31.62	46.40	78.19	43.58	62.20	112.28
Motor gasoline <sup>4</sup> .....	18.74	20.77	28.41	44.74	27.16	39.46	66.14	35.64	52.71	94.65
Jet fuel <sup>5</sup> .....	9.57	11.77	20.07	35.76	16.21	28.79	57.24	22.61	40.06	83.11
Distillate fuel oil .....	18.18	20.23	28.20	43.91	25.66	37.76	67.40	33.25	50.61	95.82
Residual fuel oil .....	8.84	9.37	14.57	30.18	12.52	22.01	47.44	16.19	31.74	68.25
Natural gas .....	4.53	7.07	6.96	7.79	8.80	8.90	10.92	11.17	11.53	14.81
Metallurgical coal .....	4.02	3.70	3.80	4.16	5.06	5.24	6.42	7.18	7.49	9.57
Other coal .....	2.02	2.24	2.33	2.57	2.72	2.88	3.55	3.48	3.69	4.74
Coal to liquids .....	--	--	--	--	--	--	--	--	--	--
Electricity .....	30.53	36.59	36.76	38.32	44.18	44.89	50.58	53.87	55.14	65.71
<b>Non-renewable energy expenditures by sector (billion nominal dollars)</b>										
Residential .....	247	317	323	350	413	425	501	549	569	701
Commercial .....	173	231	238	261	293	305	369	390	411	523
Industrial <sup>1</sup> .....	152	216	262	372	307	381	619	435	557	981
Transportation .....	412	496	681	1,069	660	934	1,569	917	1,311	2,286
Total non-renewable expenditures .....	984	1,260	1,504	2,053	1,673	2,045	3,058	2,290	2,847	4,491
Transportation renewable expenditures .....	1	1	1	1	1	1	2	1	2	2
<b>Total expenditures .....</b>	<b>985</b>	<b>1,261</b>	<b>1,505</b>	<b>2,054</b>	<b>1,674</b>	<b>2,046</b>	<b>3,060</b>	<b>2,292</b>	<b>2,849</b>	<b>4,493</b>

<sup>1</sup>Includes energy for combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

<sup>2</sup>Excludes use for lease and plant fuel and fuel used for liquefaction in export facilities.

<sup>3</sup>E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for these projections.

<sup>4</sup>Sales weighted-average price for all grades. Includes Federal, State, and local taxes.

<sup>5</sup>Kerosene-type jet fuel. Includes Federal and State taxes while excluding county and local taxes.

<sup>6</sup>Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

<sup>7</sup>Natural gas used as fuel in motor vehicles, trains, and ships. Includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

<sup>8</sup>Includes electricity-only and combined heat and power plants that have a regulatory status.

<sup>9</sup>Weighted averages of end-use fuel prices are derived from the prices shown in each sector and the corresponding sectoral consumption.

Btu = British thermal unit.

-- = Not applicable.

Note: Data for 2020 are model results and may differ from official EIA data reports.

Sources: 2020: Energy Information Administration (EIA), *Short-Term Energy Outlook*, October 2020 and EIA, AEO2021 National Energy Modeling System run ref2021.d113020a. Projections: EIA, AEO2021 National Energy Modeling System runs lowprice.d113020a, ref2021.d113020a, and highprice.d113020a.



**Table C4. Petroleum and other liquids supply and disposition**  
(million barrels per day, unless otherwise noted)

Supply and disposition	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Crude oil</b>										
Domestic crude production <sup>1</sup> .....	11.47	11.68	13.77	18.08	10.04	13.17	19.96	8.84	12.87	17.49
Alaska .....	0.46	0.57	0.57	0.57	0.31	0.56	1.18	0.00	0.62	0.79
Lower 48 states .....	11.01	11.11	13.20	17.51	9.73	12.62	18.77	8.84	12.26	16.70
Net imports.....	2.83	4.64	3.81	0.04	6.03	4.26	-2.20	6.73	4.50	-0.22
Gross imports.....	6.05	5.38	6.94	2.91	6.79	7.47	1.37	7.50	7.62	2.28
Exports .....	3.22	0.75	3.13	2.87	0.76	3.21	3.57	0.77	3.13	2.50
Other crude supply <sup>2</sup> .....	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total crude supply.....</b>	<b>14.34</b>	<b>16.31</b>	<b>17.58</b>	<b>18.12</b>	<b>16.07</b>	<b>17.43</b>	<b>17.76</b>	<b>15.57</b>	<b>17.37</b>	<b>17.27</b>
Net product imports .....	-3.22	-3.40	-5.85	-7.76	-2.29	-5.46	-7.69	-0.70	-4.63	-6.58
Gross refined product imports <sup>3</sup> .....	0.97	0.93	0.74	0.56	1.16	0.75	0.56	1.39	0.76	0.39
Unfinished oil imports.....	0.56	0.64	0.58	0.50	0.82	0.56	0.51	0.99	0.55	0.49
Blending component imports.....	0.36	0.70	0.48	0.42	0.77	0.36	0.34	0.77	0.39	0.32
Exports.....	5.11	5.67	7.64	9.24	5.05	7.13	9.11	3.85	6.33	7.79
Refinery processing gain <sup>4</sup> .....	0.96	0.99	1.01	0.94	1.07	1.09	0.89	1.08	1.09	0.89
Product stock withdrawal .....	-0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural gas plant liquids.....	5.03	5.33	6.12	7.16	5.19	6.15	7.82	5.14	6.26	7.87
Supply from renewable sources.....	0.97	1.15	1.14	1.18	1.17	1.15	1.32	1.21	1.21	1.54
Ethanol.....	0.80	0.90	0.87	0.85	0.95	0.89	0.85	1.03	0.95	0.87
Domestic production.....	0.88	1.03	1.01	1.00	1.14	1.08	1.04	1.27	1.20	1.12
Net imports.....	-0.08	-0.14	-0.14	-0.14	-0.18	-0.18	-0.19	-0.25	-0.25	-0.26
Stock withdrawal .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biodiesel .....	0.12	0.13	0.14	0.25	0.11	0.13	0.33	0.08	0.14	0.45
Domestic production.....	0.11	0.12	0.13	0.24	0.10	0.13	0.32	0.07	0.13	0.44
Net imports.....	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Stock withdrawal .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other biomass-derived liquids <sup>5</sup> .....	0.05	0.13	0.13	0.08	0.11	0.12	0.14	0.11	0.12	0.22
Domestic production.....	0.03	0.10	0.11	0.06	0.08	0.09	0.11	0.07	0.09	0.20
Net imports.....	0.02	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.03	0.03
Stock withdrawal .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquids from gas .....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquids from coal.....	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other <sup>6</sup> .....	0.21	0.19	0.23	0.25	0.20	0.25	0.23	0.19	0.26	0.23
<b>Total primary supply<sup>7</sup>.....</b>	<b>18.21</b>	<b>20.57</b>	<b>20.24</b>	<b>19.89</b>	<b>21.42</b>	<b>20.62</b>	<b>20.33</b>	<b>22.49</b>	<b>21.55</b>	<b>21.21</b>
<b>Product supplied</b>										
<b>  by fuel</b>										
Liquefied petroleum gases and other <sup>8</sup> .....	2.99	4.13	4.16	4.23	4.57	4.57	5.01	4.79	4.86	5.68
Motor gasoline <sup>9</sup> .....	8.22	8.54	8.32	8.14	8.60	8.10	7.69	8.96	8.28	7.58
of which: E85 <sup>10</sup> .....	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01
Jet fuel <sup>11</sup> .....	1.08	1.74	1.75	1.80	1.95	1.96	2.01	2.15	2.19	2.23
Distillate fuel oil <sup>12</sup> .....	3.75	3.92	3.85	3.84	3.95	3.79	3.75	4.16	3.96	3.83
of which: Diesel.....	3.46	3.51	3.45	3.46	3.55	3.41	3.38	3.76	3.58	3.47
Residual fuel oil.....	0.22	0.33	0.30	0.15	0.32	0.26	0.12	0.32	0.23	0.11
Other <sup>13</sup> .....	1.79	1.93	1.88	1.76	2.04	1.97	1.77	2.13	2.05	1.82
<b>  by sector</b>										
Residential and commercial .....	0.97	1.03	0.98	0.92	1.00	0.94	0.89	0.98	0.92	0.86
Industrial <sup>14</sup> .....	5.03	6.36	6.36	6.34	7.02	6.95	7.24	7.45	7.47	8.07
Transportation .....	12.30	13.36	13.10	12.78	13.60	12.92	12.34	14.28	13.37	12.44
Electric power <sup>15</sup> .....	0.07	0.06	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Unspecified sector <sup>16</sup> .....	-0.21	-0.22	-0.21	-0.17	-0.22	-0.20	-0.16	-0.23	-0.21	-0.16
<b>Total product supplied.....</b>	<b>18.05</b>	<b>20.59</b>	<b>20.26</b>	<b>19.92</b>	<b>21.43</b>	<b>20.65</b>	<b>20.35</b>	<b>22.51</b>	<b>21.58</b>	<b>21.24</b>
Discrepancy <sup>17</sup> .....	0.15	-0.01	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02	-0.03	-0.02

**Table C4. Petroleum and other liquids supply and disposition (continued)**  
(million barrels per day, unless otherwise noted)

Supply and disposition	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
Domestic refinery distillation capacity <sup>18</sup> .....	18.7	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Capacity utilization rate (percent) <sup>19</sup> .....	79.7	86.6	93.1	95.8	85.6	92.3	93.9	83.3	91.9	91.3
Total gross imports .....	7.99	7.69	8.77	4.42	9.58	9.18	2.82	10.69	9.36	3.52
Total gross exports .....	8.44	6.56	10.91	12.25	5.99	10.52	12.87	4.86	9.70	10.55
Total net imports .....	-0.44	1.14	-2.14	-7.83	3.60	-1.34	-10.05	5.83	-0.35	-7.02
Net import share of product supplied (percent) ..	-2.4	5.5	-10.6	-39.4	16.8	-6.5	-49.4	25.9	-1.6	-33.1
Expenditures for imported crude oil and petroleum products (billion 2020 dollars) .....	96	81	191	162	117	240	98	146	267	162

<sup>1</sup>Includes lease condensate.  
<sup>2</sup>Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude oil stock withdrawals.  
<sup>3</sup>Includes other hydrocarbons and alcohols.  
<sup>4</sup>The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.  
<sup>5</sup>Includes pyrolysis oils, biomass-derived Fischer-Tropsch liquids, biobutanol, and renewable feedstocks used for the on-site production of diesel and gasoline.  
<sup>6</sup>Includes domestic sources of other blending components, other hydrocarbons, and ethers.  
<sup>7</sup>Total crude supply, net product imports, refinery processing gain, product stock withdrawal, natural gas plant liquids, supply from renewable sources, liquids from gas, liquids from coal, and other supply.  
<sup>8</sup>Includes ethane, natural gasoline, and refinery olefins.  
<sup>9</sup>Includes ethanol and ethers blended into gasoline.  
<sup>10</sup>E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for these projections.  
<sup>11</sup>Includes only kerosene type.  
<sup>12</sup>Includes distillate fuel oil from petroleum and biomass feedstocks and kerosene use in the residential sector.  
<sup>13</sup>Includes aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, methanol, miscellaneous petroleum products, and kerosene not used in the residential sector.  
<sup>14</sup>Includes energy for combined heat and power plants that have a non-regulatory status, and small on-site generating systems.  
<sup>15</sup>Includes consumption of energy by electricity-only and combined heat and power plants that have a regulatory status.  
<sup>16</sup>Represents consumption unattributed to the sectors above.  
<sup>17</sup>Balancing item. Includes unaccounted for supply, losses, and gains.  
<sup>18</sup>End-of-year operable capacity.  
<sup>19</sup>Rate is calculated by dividing the gross annual input to atmospheric crude oil distillation units by their operable refining capacity in barrels per calendar day.  
Note: Totals may not equal sum of components due to independent rounding. Data for 2020 are model results and may differ from official EIA data reports.  
Sources: 2020: Energy Information Administration (EIA), *Short-Term Energy Outlook*, October 2020 and EIA, AEO2021 National Energy Modeling System run ref2021.d113020a. Projections: EIA, AEO2021 National Energy Modeling System runs lowprice.d113020a, ref2021.d113020a, and highprice.d113020a.

**Table C5. Petroleum and other liquids prices**  
(2020 dollars per gallon, unless otherwise noted)

Sector and fuel	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Crude oil prices (2020 dollars per barrel)</b>										
Brent spot.....	41	37	73	136	43	87	155	48	95	173
West Texas Intermediate spot .....	39	35	71	132	41	84	148	46	91	168
Average imported refiners acquisition cost <sup>1</sup> ..	37	36	70	132	42	82	151	47	90	167
Brent / West Texas Intermediate spread.....	2	2	2	3	2	3	7	1	4	5
<b>Delivered sector product prices</b>										
<b>Residential</b>										
Propane.....	1.58	1.51	1.95	2.71	1.70	2.21	2.96	1.83	2.39	3.22
Distillate fuel oil .....	2.44	2.53	3.41	4.89	2.60	3.67	5.39	2.65	3.82	5.71
<b>Commercial</b>										
Distillate fuel oil .....	2.45	1.88	2.78	4.26	1.96	3.04	4.76	2.02	3.20	5.09
Residual fuel oil .....	0.79	0.91	1.69	3.14	1.05	2.00	3.62	1.17	2.17	3.96
Residual fuel oil (2020 dollars per barrel).	33	38	71	132	44	84	152	49	91	166
<b>Industrial<sup>2</sup></b>										
Propane.....	0.70	0.76	1.08	1.68	0.88	1.26	1.85	0.98	1.39	2.07
Distillate fuel oil .....	2.44	1.85	2.74	4.21	1.93	3.00	4.72	1.99	3.16	5.06
Residual fuel oil .....	0.81	1.15	1.97	3.43	1.27	2.27	3.91	1.38	2.46	4.23
Residual fuel oil (2020 dollars per barrel).	34	48	83	144	53	95	164	58	103	178
<b>Transportation</b>										
Propane.....	1.10	1.20	1.50	1.96	1.32	1.65	2.09	1.41	1.75	2.23
E85 <sup>3</sup> .....	2.00	1.89	2.58	3.84	2.01	2.90	4.11	2.17	3.03	4.41
Ethanol wholesale price .....	1.39	1.40	1.40	1.37	1.54	1.51	1.23	1.46	1.44	1.36
Motor gasoline <sup>4</sup> .....	2.26	2.06	2.80	4.12	2.18	3.11	4.38	2.24	3.23	4.68
Jet fuel <sup>5</sup> .....	1.29	1.31	2.22	3.70	1.46	2.56	4.27	1.60	2.77	4.64
Diesel fuel (distillate fuel oil) <sup>6</sup> .....	2.52	2.41	3.29	4.73	2.49	3.54	5.25	2.53	3.69	5.59
Residual fuel oil .....	1.38	1.20	1.75	3.45	1.26	2.15	3.91	1.26	2.43	4.22
Residual fuel oil (2020 dollars per barrel).	58	50	74	145	53	90	164	53	102	177
<b>Electric power<sup>7</sup></b>										
Distillate fuel oil .....	2.43	1.71	2.63	4.18	1.79	2.90	4.65	1.90	3.07	4.97
Residual fuel oil .....	1.24	0.82	2.20	3.62	1.25	2.45	4.07	1.32	2.54	4.27
Residual fuel oil (2020 dollars per barrel).	52	34	92	152	52	103	171	55	107	179
<b>Average prices, all sectors<sup>8</sup></b>										
Propane.....	1.31	1.24	1.64	2.31	1.38	1.84	2.48	1.47	1.96	2.67
Motor gasoline <sup>4</sup> .....	2.25	2.06	2.80	4.12	2.18	3.11	4.38	2.24	3.23	4.68
Jet fuel <sup>5</sup> .....	1.29	1.31	2.22	3.70	1.46	2.56	4.27	1.60	2.77	4.64
Distillate fuel oil .....	2.50	2.29	3.17	4.63	2.36	3.41	5.12	2.39	3.56	5.44
Residual fuel oil .....	1.32	1.16	1.79	3.46	1.26	2.17	3.92	1.27	2.43	4.22
Residual fuel oil (2020 dollars per barrel).	56	49	75	145	53	91	165	53	102	177
<b>Average .....</b>	<b>1.90</b>	<b>1.68</b>	<b>2.33</b>	<b>3.48</b>	<b>1.75</b>	<b>2.54</b>	<b>3.67</b>	<b>1.82</b>	<b>2.66</b>	<b>3.86</b>

**Table C5. Petroleum and other liquids prices (continued)**  
(nominal dollars per gallon, unless otherwise noted)

Sector and fuel	2020	Projections								
		2030			2040			2050		
		Low oil price	Reference	High oil price	Low oil price	Reference	High oil price	Low oil price	Reference	High oil price
<b>Crude oil prices (nominal dollars per barrel)</b>										
Brent spot.....	41	45	89	177	64	132	281	91	185	419
West Texas Intermediate spot.....	39	43	86	172	61	128	268	89	178	406
Average imported refiners acquisition cost <sup>1</sup> ..	37	44	85	173	62	125	274	90	176	403
<b>Delivered sector product prices</b>										
<b>Residential</b>										
Propane .....	1.58	1.82	2.38	3.53	2.53	3.36	5.36	3.49	4.67	7.78
Distillate fuel oil.....	2.44	3.06	4.17	6.38	3.88	5.57	9.75	5.05	7.46	13.82
<b>Commercial</b>										
Distillate fuel oil.....	2.45	2.28	3.39	5.55	2.93	4.62	8.61	3.85	6.24	12.32
Residual fuel oil .....	0.79	1.11	2.06	4.10	1.57	3.04	6.55	2.23	4.23	9.58
<b>Industrial<sup>2</sup></b>										
Propane .....	0.70	0.92	1.32	2.19	1.32	1.92	3.35	1.87	2.72	5.00
Distillate fuel oil.....	2.44	2.24	3.35	5.50	2.89	4.56	8.54	3.79	6.17	12.24
Residual fuel oil .....	0.81	1.39	2.41	4.47	1.89	3.45	7.07	2.64	4.80	10.24
<b>Transportation</b>										
Propane .....	1.10	1.46	1.82	2.55	1.97	2.50	3.78	2.68	3.41	5.40
E85 <sup>3</sup> .....	2.00	2.28	3.15	5.00	3.01	4.41	7.44	4.14	5.92	10.68
Ethanol wholesale price.....	1.39	1.70	1.71	1.79	2.30	2.30	2.23	2.78	2.81	3.29
Motor gasoline <sup>4</sup> .....	2.26	2.49	3.41	5.37	3.26	4.73	7.93	4.26	6.31	11.33
Jet fuel <sup>5</sup> .....	1.29	1.59	2.71	4.83	2.19	3.89	7.73	3.05	5.41	11.22
Diesel fuel (distillate fuel oil) <sup>6</sup> .....	2.52	2.92	4.01	6.17	3.71	5.38	9.49	4.82	7.21	13.52
Residual fuel oil .....	1.38	1.45	2.14	4.50	1.88	3.26	7.08	2.41	4.74	10.21
<b>Electric power<sup>7</sup></b>										
Distillate fuel oil.....	2.43	2.06	3.21	5.45	2.68	4.41	8.40	3.61	6.00	12.02
Residual fuel oil .....	1.24	0.99	2.68	4.72	1.87	3.73	7.36	2.51	4.95	10.34
<b>Average prices, all sectors<sup>8</sup></b>										
Propane .....	1.31	1.50	2.00	3.01	2.06	2.80	4.49	2.81	3.83	6.45
Motor gasoline <sup>4</sup> .....	2.25	2.49	3.41	5.38	3.26	4.73	7.93	4.27	6.31	11.33
Jet fuel <sup>5</sup> .....	1.29	1.59	2.71	4.83	2.19	3.89	7.73	3.05	5.41	11.22
Distillate fuel oil.....	2.50	2.78	3.87	6.04	3.52	5.19	9.26	4.57	6.95	13.18
Residual fuel oil (nominal dollars per barrel)	56	59	92	190	79	138	298	102	200	429
<b>Average.....</b>	<b>1.90</b>	<b>2.03</b>	<b>2.84</b>	<b>4.54</b>	<b>2.62</b>	<b>3.87</b>	<b>6.63</b>	<b>3.46</b>	<b>5.20</b>	<b>9.34</b>

<sup>1</sup>Weighted average price delivered to U.S. refiners.

<sup>2</sup>Includes combined heat and power plants that have a non-regulatory status, and small on-site generating systems.

<sup>3</sup>E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for these projections.

<sup>4</sup>Sales weighted-average price for all grades. Includes Federal, State, and local taxes.

<sup>5</sup>Includes only kerosene type.

<sup>6</sup>Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

<sup>7</sup>Includes electricity-only and combined heat and power plants that have a regulatory status.

<sup>8</sup>Weighted averages of end-use fuel prices are derived from the prices in each sector and the corresponding sectoral consumption.

Note: Data for 2020 are model results and may differ from official EIA data reports.

Sources: 2020: Energy Information Administration (EIA), *Short-Term Energy Outlook*, October 2020 and EIA, AEO2021 National Energy Modeling System run ref2021.d113020a. Projections: EIA, AEO2021 National Energy Modeling System runs lowprice.d113020a, ref2021.d113020a, and highprice.d113020a.