

Table 4b. Imported refiner acquisition cost of crude oil, projected versus actual

Projected price in nominal U.S. dollars (USD)

(nominal USD per barrel)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
AEO1994	17.06	17.21	18.24	19.43	20.64	22.12	23.76	25.52	27.51	29.67	31.86	34.00	36.05	38.36	40.78	43.29	45.88	48.37											
AEO1995		15.24	17.27	18.23	19.26	20.39	21.59	22.97	24.33	25.79	27.27	28.82	30.38	32.14	33.89	35.85	37.97	40.28											
AEO1996			17.16	17.74	18.59	19.72	20.97	22.34	23.81	25.26	26.72	28.22	29.87	31.51	33.13	34.82	36.61	38.48	40.48	42.55	44.65	46.81	49.07						
AEO1997				19.99	19.42	19.55	20.07	20.59	21.68	22.71	23.75	24.78	25.87	26.94	28.06	29.19	30.38	31.60	32.94	34.32	35.72	37.17	38.73						
AEO1998					18.54	18.79	19.87	20.95	21.79	22.53	23.46	24.34	25.27	26.04	27.00	28.02	29.09	30.22	31.43	32.72	34.03	35.40	36.86	38.42	40.09	41.86	43.74	45.82	
AEO1999						12.50	13.64	14.67	16.35	17.87	19.64	21.14	22.59	24.20	25.72	26.54	27.42	28.38	29.41	30.52	31.67	32.87	34.21	35.67	37.31	39.09	41.05	43.31	
AEO2000							17.35	21.80	20.99	21.52	22.05	22.62	23.23	23.85	24.51	25.17	25.85	26.52	27.22	27.93	28.67	29.48	30.39	31.36	32.42	33.58	34.89	36.32	
AEO2001								28.21	24.86	22.82	22.36	23.04	23.65	24.25	24.85	25.43	26.05	26.66	27.28	27.93	28.60	29.34	30.17	31.10	32.16	33.31	34.62	36.04	
AEO2002									22.99	21.99	24.00	24.86	25.66	26.50	27.36	28.18	29.03	29.89	30.79	31.80	32.82	33.90	35.00	36.17	37.43	38.84	40.41	42.12	
AEO2003										23.65	26.92	25.70	26.10	26.75	27.39	28.07	28.79	29.61	30.51	31.47	32.50	33.58	34.71	35.90	37.15	38.43	39.77	41.26	
AEO2004											27.65	24.54	24.45	25.14	25.87	26.65	27.50	28.40	29.42	30.45	31.57	32.79	34.05	35.37	36.79	38.32	39.97	41.70	43.52
AEO2005												35.74	35.40	31.78	29.52	28.78	28.43	28.73	29.84	31.01	32.17	33.39	34.65	35.92	37.29	38.78	40.36	42.03	43.81
AEO2006													50.97	56.42	54.75	53.19	51.54	49.79	50.73	51.79	52.88	53.96	55.07	56.98	59.04	61.25	63.51	65.84	68.53
AEO2007														63.64	62.68	61.40	59.20	56.89	54.85	53.24	52.75	52.91	54.04	55.24	56.77	58.32	59.94	61.60	63.60
AEO2008															63.72	75.98	72.58	70.43	68.90	67.16	65.24	63.33	61.38	59.33	60.64	62.69	65.00	67.23	69.32
AEO2009																98.58	39.99	50.84	65.08	76.70	87.64	97.94	109.32	117.78	125.56	133.76	139.73	145.39	150.79
AEO2010																	57.35	69.43	69.54	77.21	85.19	91.87	96.82	102.20	107.12	112.49	116.13	119.94	123.96
AEO2011																		75.52	82.10	83.37	87.10	91.03	94.78	99.05	104.05	109.12	114.16	119.18	124.05
AEO2012																			102.10	102.50	111.15	117.41	122.81	122.33	126.23	129.18	132.42	136.02	139.60
AEO2013																				103.10	99.38	98.61	99.02	101.79	105.65	109.60	113.66	117.84	122.42
AEO2014																					103.07	101.27	93.33	90.75	90.53	92.41	95.70	99.75	104.11
AEO2015																						102.51	59.61	77.64	83.99	85.57	88.91	92.30	96.70
AEO2016																							52.86	37.91	50.52	62.26	76.62	85.47	92.56
AEO2017																								38.48	46.53	58.65	67.09	72.91	78.12
AEO2018																									46.73	47.03	49.28	67.62	76.89
AEO2019																										64.51	66.02	71.99	75.96
AEO2020																											56.76	49.87	61.56
AEO2021																												36.86	42.07
AEO2022																													67.71
Actual in nominal dollars	16.14	15.51	17.14	20.64	18.53	12.04	17.26	27.70	22.00	23.71	27.71	35.90	48.86	59.02	67.04	92.77	59.17	75.86	102.63	101.09	98.11	89.56	46.40	38.75	49.12	60.95	57.94	37.41	65.78
Average absolute difference	0.92	0.98	0.42	1.79	0.76	6.81	3.38	5.70	2.30	2.25	3.40	9.42	20.05	27.05	31.80	52.97	22.34	33.68	55.47	49.54	43.52	36.21	23.87	26.40	25.63	25.36	26.33	35.21	28.43

Table 4b. Imported refiner acquisition cost of crude oil, projected versus actual (continued)

Projected versus actual

(percentage difference)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
AEO1994	5.7	10.9	6.4	-5.9	11.4	83.7	37.7	-7.9	25.0	25.1	15.0	-5.3	-26.2	-35.0	-39.2	-53.3	-22.5	-36.2												
AEO1995		-1.8	0.8	-11.7	4.0	69.4	25.1	-17.1	10.6	8.8	-1.6	-19.7	-37.8	-45.5	-49.4	-61.4	-35.8	-46.9												
AEO1996			0.1	-14.0	0.3	63.8	21.5	-19.3	8.2	6.5	-3.6	-21.4	-38.9	-46.6	-50.6	-62.5	-38.1	-49.3	-60.6	-57.9	-54.5	-47.7	5.8							
AEO1997				-3.1	4.8	62.4	16.3	-25.7	-1.5	-4.2	-14.3	-31.0	-47.1	-54.3	-58.1	-68.5	-48.7	-58.3	-67.9	-66.1	-63.6	-58.5	-16.5							
AEO1998					0.0	56.1	15.1	-24.4	-1.0	-5.0	-15.3	-32.2	-48.3	-55.9	-59.7	-69.8	-50.8	-60.2	-69.4	-67.6	-65.3	-60.5	-20.6	-0.9	-18.4	-31.3	-24.5	22.5		
AEO1999						3.8	-21.0	-47.0	-25.7	-24.6	-29.1	-41.1	-53.8	-59.0	-61.6	-71.4	-53.7	-62.6	-71.3	-69.8	-67.7	-63.3	-26.3	-8.0	-24.0	-35.9	-29.1	15.8		
AEO2000							0.5	-21.3	-4.6	-9.2	-20.4	-37.0	-52.5	-59.6	-63.4	-72.9	-56.3	-65.0	-73.5	-72.4	-70.8	-67.1	-34.5	-19.1	-34.0	-44.9	-39.8	-2.9		
AEO2001								1.8	13.0	-3.7	-19.3	-35.8	-51.6	-58.9	-62.9	-72.6	-56.0	-64.9	-73.4	-72.4	-70.9	-67.2	-35.0	-19.7	-34.5	-45.3	-40.2	-3.7		
AEO2002									4.5	-7.3	-13.4	-30.8	-47.5	-55.1	-59.2	-69.6	-50.9	-60.6	-70.0	-68.5	-66.5	-62.1	-24.6	-6.7	-23.8	-36.3	-30.3	12.6		
AEO2003										-0.3	-2.9	-28.4	-48.0	-55.8	-60.1	-70.5	-52.6	-62.0	-71.1	-69.8	-67.9	-63.7	-27.6	-10.4	-26.9	-39.1	-33.7	6.3	-37.3	
AEO2004											-0.2	-31.7	-50.0	-57.4	-61.4	-71.3	-53.5	-62.6	-71.3	-69.9	-67.8	-63.4	-26.6	-8.7	-25.1	-37.1	-31.0	11.5	-33.8	
AEO2005												-0.4	-27.6	-46.2	-56.0	-69.0	-52.0	-62.1	-70.9	-69.3	-67.2	-62.7	-25.3	-7.3	-24.1	-36.4	-30.3	12.4	-33.4	
AEO2006													4.3	-4.4	-18.3	-42.7	-12.9	-34.4	-50.6	-48.8	-46.1	-39.8	18.7	47.0	20.2	0.5	9.6	76.0	4.2	
AEO2007														7.8	-6.5	-33.8	0.1	-25.0	-46.6	-47.3	-46.2	-40.9	16.5	42.6	15.6	-4.3	3.5	64.7	-3.3	
AEO2008															-5.0	-18.1	22.7	-7.2	-32.9	-33.6	-33.5	-29.3	32.3	53.1	23.4	2.9	12.2	79.7	5.4	
AEO2009																6.3	-32.4	-33.0	-36.6	-24.1	-10.7	9.4	135.6	203.9	155.6	119.5	141.2	286.6	129.2	
AEO2010																	-3.1	-8.5	-32.2	-23.6	-13.2	2.6	108.7	163.7	118.1	84.6	100.4	220.6	88.5	
AEO2011																		-0.5	-20.0	-17.5	-11.2	1.6	104.3	155.6	111.8	79.0	97.0	218.6	88.6	
AEO2012																			-0.5	1.4	13.3	31.1	164.7	215.7	157.0	111.9	128.6	263.6	112.2	
AEO2013																					2.0	1.3	10.1	113.4	162.7	115.1	79.8	96.2	215.0	86.1
AEO2014																						5.1	13.1	101.1	134.2	84.3	51.6	65.2	166.6	58.3
AEO2015																							14.5	28.5	100.4	71.0	40.4	53.5	146.7	47.0
AEO2016																								13.9	-2.2	2.9	2.2	32.2	128.5	40.7
AEO2017																									-0.7	-5.3	-3.8	15.8	94.9	18.8
AEO2018																										-4.9	-22.8	-14.9	80.8	16.9
AEO2019																											5.8	14.0	92.4	15.5
AEO2020																												-2.0	33.3	-6.4
AEO2021																													-1.5	-36.0
AEO2022																														2.9
Average absolute difference	5.7	6.3	2.4	8.7	4.1	56.5	19.6	20.6	10.5	9.5	12.3	26.2	41.0	45.8	47.4	57.1	37.8	44.4	54.0	49.0	44.4	40.4	51.4	68.1	52.2	41.6	45.4	94.1	43.2	

Data source: Historical data are from the U.S. Energy Information Administration open data API (accessed April 2022), <http://www.eia.gov/opendata/>; series: TOTAL.RAIMUUS.A; projections: Annual Energy Outlook.

Reference case projections from various editions

GDP data from the U.S. Bureau of Economic Analysis (accessed February 2022), <https://apps.bea.gov/national/xls/gdplev.xlsx>

Notes: shading indicates overestimation (blue) or underestimation (green).