

## **Alternative Fuel Price Forecast and Assumptions**

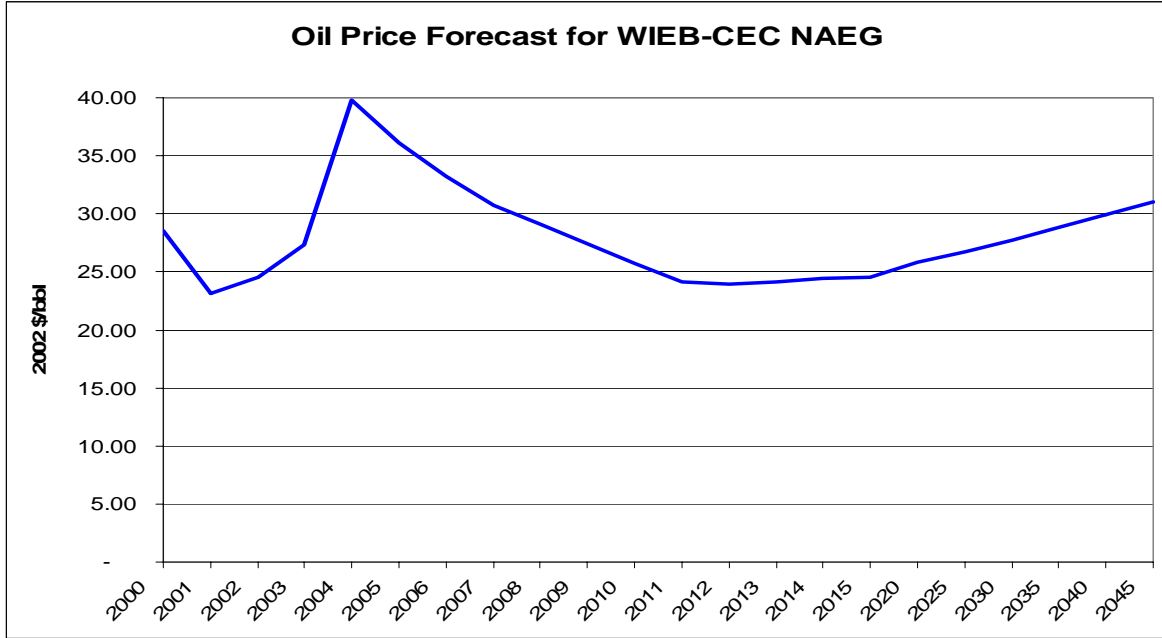
Natural gas competes with a variety of fuels, such as oil and coal. Many large industrial users and electric power generators possess dual fuel burning capability. This fuel switching capability for operating facilities is normally between natural gas and fuel oils (residual fuel oil or distillates). These customers can and do react to price differentials between natural gas and an alternate fuels to switch between them depending on the economics.

About 10 percent of total gas consumption in the United States can be impacted by fuel switching. The analysis assumes that residual or distillates will compete for the gas market in various demand regions in the North America Regional Gas model (NARG). In this study, California is assumed to have no ability to fuel switch due to mandated requirements related to air emissions. However, industrial and electric power generators in other regions will have the ability to switch between natural gas and alternate fuels depending on the relative price differential. The price of residual fuel oil or distillates will be derived from a crude oil price forecast depending on regional characteristics of fuel use and pricing of distillate and/or residual fuels in these regions.

World oil prices have exhibited volatility and variability much like natural gas over many years. In nominal terms, the highest oil prices were during the first major Iran-Iraq war, reaching as high as \$40 per barrel in 1981. The lowest price ever reached was \$9.39 in December 1998. Since then prices have been rising, reaching new highs above \$50.00 per barrel in October 2004. World oil price projections made by the Energy Administration Information (EIA) indicates a broad range of prices ranging from a low of about \$17 per barrel to a high around \$51 (nominal dollars) per barrel by the year 2025.

Analysis of natural gas and crude oil prices over the past decades indicates the closeness between the prices. For example, there is a correlation between heating oil prices and natural gas prices as seen on the Eastern markets.

Nymex futures are one of the best representatives for the expected near term outlook for the crude price. These futures are currently traded over an 8-year period. The Nymex futures are used as the base for the near term crude oil price forecast to 2010. Crude oil price projections beyond 2010 are represented by the DOE/EIA's forecast included in the 2004 Annual Energy Outlook. The prices have been converted to constant 2002 year dollars, starting at about \$40 per barrel in 2004 and declining to about \$24 to \$26 per barrel over the future years. The crude oil price forecast by year in 2002 dollars per barrels that will used as input to the NARG model is shown in the attached figure and accompanying table.



Oil Price Forecast for WIEB-CEC NARG - 2002 Dollars/Barrel

Year	\$/Bbl	Year	\$/Bbl
2000	28.50	2025	26.72
2001	23.16	2026	26.92
2002	24.54	2027	27.12
2003	27.29	2028	27.33
2004	39.82	2029	27.53
2005	36.13	2030	27.74
2006	33.26	2031	27.95
2007	30.68	2032	28.16
2008	29.12	2033	28.38
2009	27.45	2034	28.59
2010	25.78	2035	28.81
2011	24.11	2036	29.02
2012	23.98	2037	29.24
2013	24.18	2038	27.47
2014	24.41	2039	29.69
2015	24.56	2040	29.91
2016	24.78	2041	30.14
2017	24.97	2042	30.37
2018	25.43	2043	30.60
2019	25.39	2044	30.83
2020	25.82	2045	31.06
2021	25.78		
2022	26.28		
2023	26.54		
2024	26.50		

