

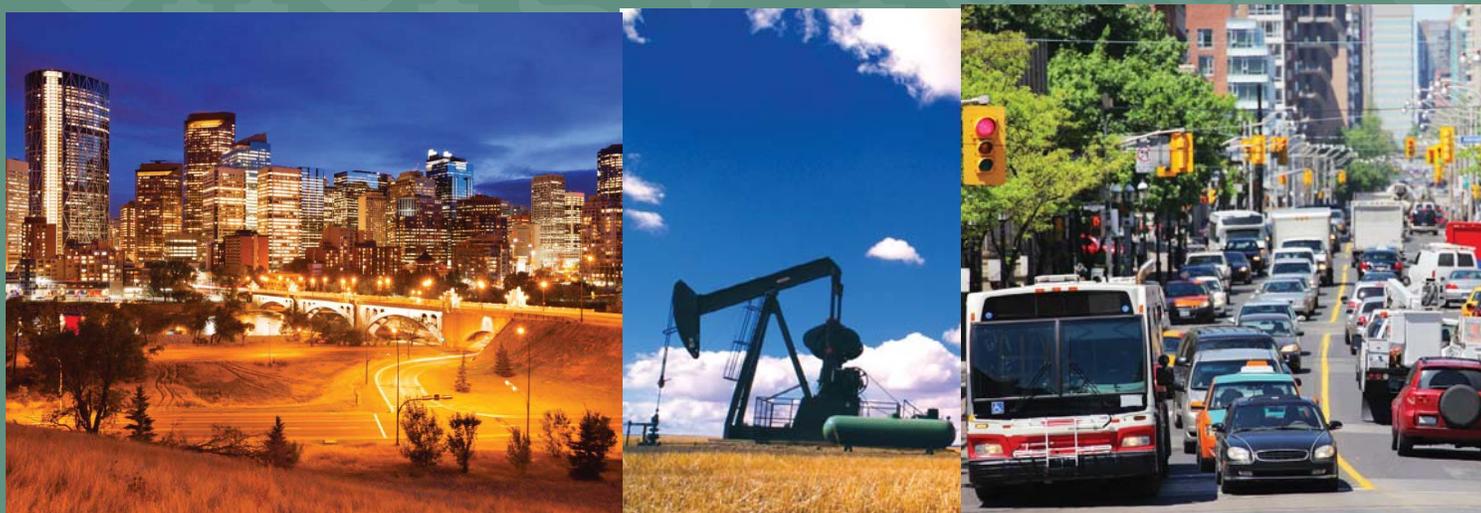


National Energy
Board

Office national
de l'énergie

Canada's Energy Future 2013

ENERGY SUPPLY AND DEMAND PROJECTIONS TO 2035



AN ENERGY MARKET ASSESSMENT NOVEMBER 2013

Canada

KEY DRIVERS

- EF 2013 considers three cases – a Reference Case, which reflects a moderate view of future energy prices and economic growth – and two sensitivity cases. These sensitivity cases represent a range of possible outcomes for the Canadian energy system over the projection period. Higher and lower crude oil and natural gas prices characterize the sensitivity cases, referred to as the High Price and Low Price Cases.

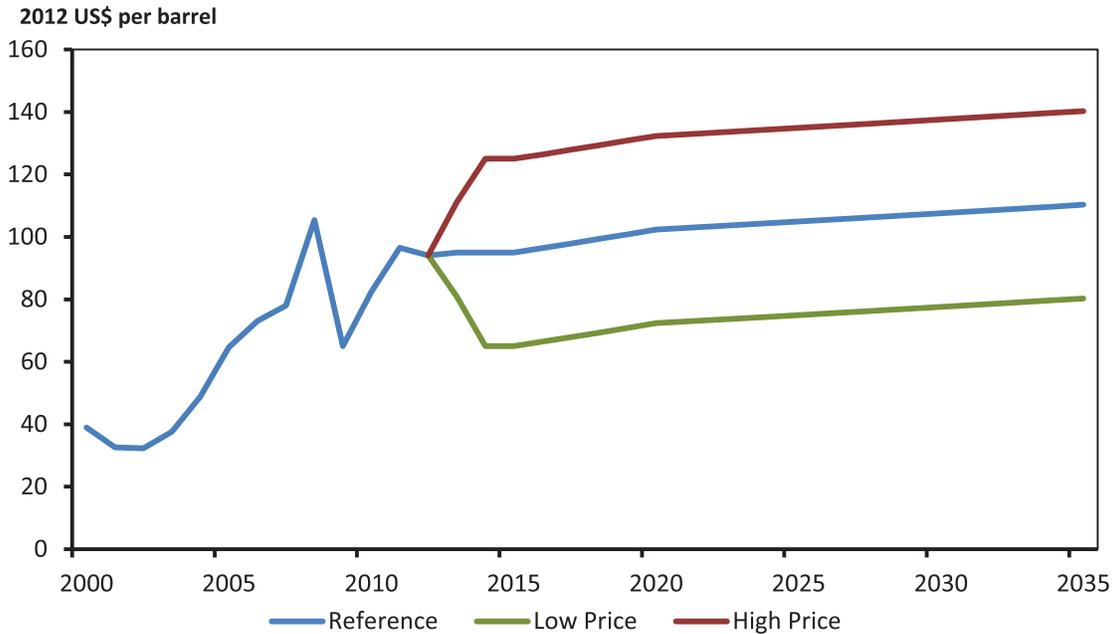
Energy Prices

Crude Oil Prices

- In the Reference Case, the WTI crude oil price is assumed to average US\$95/bbl in 2013. As shown in Figure 3.1, the price in 2012 dollars stays flat at US\$95/bbl until 2016 when it begins to slowly increase over the projection period, reaching US\$110/bbl by 2035. Growing tight and shale oil production have increased global supply. However, strong oil demand from developing countries offsets this supply growth and contributes to the gradual price increase over the projection period. The WTI crude oil price is 16 per cent higher in 2035 compared with 2013.
- In the Low Price Case, the WTI crude oil price is assumed to be US\$30/bbl below the Reference Case price throughout the projection period, reaching US\$80/bbl in 2035. In the High Price Case, it is assumed to be \$30 higher than the Reference Case price, rising to US\$140/bbl by 2035.

FIGURE 3.1

WTI Crude Oil Price at Cushing, Oklahoma, All Cases



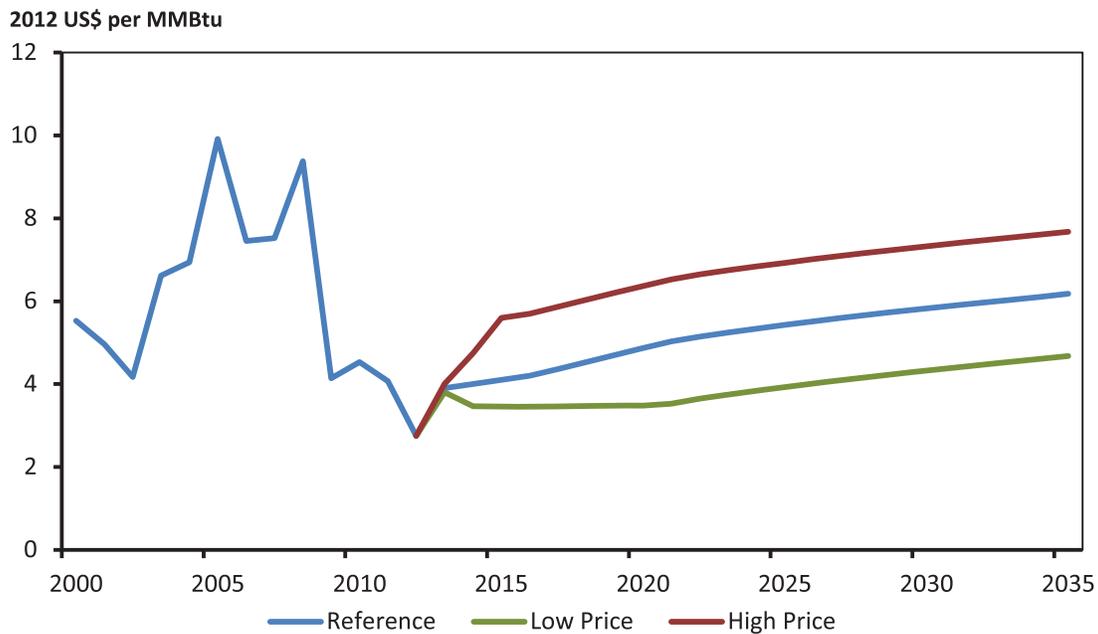
- As noted in Chapter 2, throughout 2011 and 2012, the WTI oil price was at a significant discount to the Brent price, a major crude oil price marker in Europe. Historically, the two prices have closely tracked one another. By mid-2013, WTI and Brent prices were moving closer together again, as oil infrastructure developments helped alleviate the oversupply of oil in the midcontinent of North America. The traditional relationship between WTI and international oil prices is assumed to continue to hold throughout the projection period.

Natural Gas Prices

- The Henry Hub price for natural gas in the Reference Case is assumed to increase from US\$3.90/MMBtu in 2013 to US\$6.20/MMBtu in 2035 (in 2012 dollars) as shown in Figure 3.2. The Henry hub natural gas price is nearly 60 per cent higher in 2035 compared with 2013.
- In the Low Price Case, the natural gas price is assumed to reach US\$4.70/MMBtu by 2035 and US\$7.70/MMBtu in the High Price Case.

FIGURE 3.2

Henry Hub Natural Gas Price at Louisiana, All Cases



Electricity Prices

- Electricity prices are largely determined in regional markets. Consumer prices for electricity are mainly composed of generation, transmission and distribution costs. Prices are generally lowest in the hydro-based provinces (B.C., Manitoba, and Quebec), which benefit from a high proportion of low-cost heritage assets. These assets are often many decades old and their capital costs are largely paid off.
- Prices in most jurisdictions are based on the actual cost of providing service to consumers, including a regulated rate of return on the generation, transmission and distribution assets. Provincial and, in some cases, municipal regulators are responsible for approving these costs. All provinces and the territories follow this model, except Alberta and Ontario, which operate wholesale electricity markets. In Alberta, competitive wholesale markets determine wholesale electricity prices, from which consumer rates are derived. In Ontario, while the wholesale market determines spot prices, most of the generators receive fixed or regulated prices, making the market a hybrid of the two methodologies.
- Typically, prices tend to be higher for residential customers and lower for large volume industrial customers, reflecting the cost of serving these markets. In addition, large customers may have direct access to wholesale markets where power costs can be lower than the rates offered by the retail distribution utilities.
- In the Reference Case, the average retail electricity price (including the residential, commercial and industrial prices) is approximately 20 per cent higher in 2035 compared with 2013, in real dollars. This reflects the increasing cost of sourcing new generation and planned improvements to transmission systems. Electricity prices in the sensitivity cases vary moderately from the Reference Case, influenced by the change in natural gas and oil prices, as well as differences in electric demand and generation.