Power generation: costs

Why the cost matters to you.
Natural gas. The clear energy choice.
Natural gas – lowest cost and reliable

Natural gas is the lowest total cost, cleanest, and most efficient thermal baseload power generation technology. Advances in technology have unlocked vast reserves within North America, and we now have over a 100 year supply of natural gas at current usage rates. The U.S. Energy Information Administration (U.S. EIA) recognizes the significant new supplies of natural gas, forecasting growing demand for natural gas and sustained lower prices far into the future.

Natural gas is the fastest growing power generation fuel (Percentages may not total 100% due to independent rounding)

Coal – shrinking market share

U.S. coal prices increased 76 percent from 2004 to 2011, according to the Department of Energy (DOE). Coal’s market share in Canada and the U.S. has decreased 10.6 percent from 1997 to 2011 bringing coal’s share of the power market down to 39 percent (its lowest level in decades). In addition to rising coal extraction and transportation costs, compliance with environmental regulations is projected to dramatically increase costs. The Brattle Group estimates compliance costs for some coal plants to be as high as an additional 4.6 cents per kilowatt-hour (kWh), leading to a significant increase in the cost of coal-fired power generation. As a result of cost pressure, Barclays Capital estimates 42 Gigawatts (GW) of antiquated underutilized coal-power plants to be shutdown by 2015.

Nuclear – reliable but expensive

Nuclear power generation is a reliable baseload energy source without greenhouse-gas emissions; however, the cost to construct a new nuclear plant exceeds nearly all other generation types. A nuclear power plant can cost over five times the cost of constructing a natural gas plant. A long-term solution has not yet been developed to address safety concerns stemming from the safe handling and disposal of radioactive waste. Although a few units are expected to come on line in the next decade, cost and safety considerations have stopped nuclear plant construction in North America for the past 15 years.

Wind – subsidy dependent and intermittent

The largest challenge with wind is its intermittent nature, making it unreliable for baseload service without being backed-up by an existing power source such as natural gas or hydro-electricity. U.S. taxpayers have funded subsidies to develop wind energy systems costing approximately $5 billion in 2010. Barclays Capital estimates the cost of wind generation can be up to 60 percent greater without subsidies.

Levelized cost of new power generation

* One GW plant could supply power to roughly 990,000 average homes.