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National Energy Board | Office national de l'énergie

Energy Brief

Natural Gas Supply Costs in Western Canada in 2007

In 2007, the average supply cost including return on investment to produce natural gas in the Western Canada Sedimentary Basin (WCSB) was $7.88/GJ (gigajoule). This supply cost, in Canadian dollars, and based on the NOVA Inventory Transfer (Alberta's natural gas hub,) was higher than the average Alberta spot price for natural gas, $6.11/GJ.

This contributed to an overall natural gas drilling slowdown in the WCSB in 2007. In general, resource companies were making substantial oil development investments, leaving natural gas investments to compete for available human and financial resources.

Last year in its *Short-term Canadian Natural Gas Deliverability 2007-2009* report, the NEB noted that progressively greater proportions of total gas drilling investments are targeting the western side of the WCSB.

In 2007, the Deep Basin areas had some of the lowest supply costs, creating incentive for industry to move westward from the shallower regions in southeast Alberta. For many other areas, based on 2007 prices, new gas yielded returns of less than 15 per cent, contributing to the 2007 slowdown.

Natural gas prices generally recovered in 2008, moving into the $8.00/GJ range in the spring, and rising sharply to $10 and $11 in June. However, prices then moved back down in the summer months to the $7.00 range.

Looking ahead, as companies set their drilling budgets this fall, some analysts were predicting increased drilling activity. If increased drilling activity leads to supply cost increases, this NEB analysis may be repeated as more cost details reflecting 2008 trends become available.

What are the supply costs to produce natural gas?

For a gas well to be economically viable, predicted revenues from the production have to be greater than all of the upfront costs, such as purchasing the land, geological studies, drilling costs of steel and labour, the costs of facilities and camps, operating costs, royalties, and taxes, while providing an attractive rate of return.

Supply costs are the present value of the cost of producing a gigajoule of natural gas over the life of a well. They include all costs related to drilling a well and bringing it into production. These include royalties and taxes, and factor in a rate of return that allows companies to cover interest charges and dividends payable to their equity investors.

Supply costs go up and down depending on how much drilling activity there is at a given time, which can affect the demand for and supply of drilling rigs and services, and the availability of skilled labour. Material costs, particularly steel, are also a factor. Technology, efficiency, the overall depth of the targeted wells, and their ongoing productivity also affect supply costs. Other economic factors such as the value of the Canadian dollar and fiscal and tax regimes, particularly royalties set by the provinces, affect supply costs.

Canada

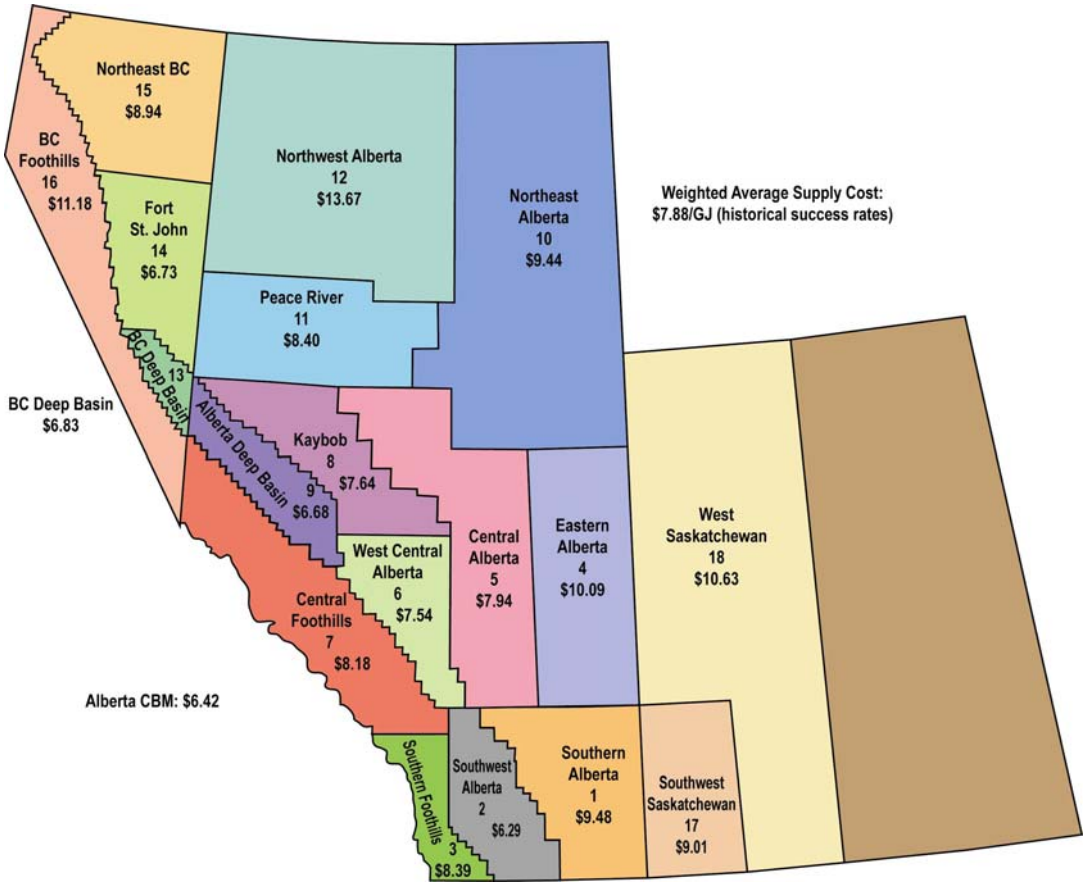
Western Canada Sedimentary Basin (WCSB)

The Western Canada Sedimentary Basin (WCSB) is the major hydrocarbon basin in Canada. It covers most of Alberta, about one third of Saskatchewan, and smaller portions of British Columbia, Yukon, the Northwest Territories and Manitoba. The WCSB accounts for about 98 per cent of total Canadian natural gas production, also representing 23 per cent of the natural gas production in North America each year.

The economics of the WCSB are changing. Recently, gas production from the WCSB has flattened after many years of growth, leading to uncertainty about whether the industry can increase or maintain current production levels over the longer term. Because new wells are producing less on average, the supply cost to produce WCSB gas is increasing.

This affects the region's competitiveness with other natural gas regions in North America. Supply costs can influence investment decisions, and how much natural gas is produced and available within the WCSB and North America. This, in turn, influences the transportation industry in the region, and whether the pipeline network is carrying gas near its capacity, or underused.

Average 2007 Supply Costs by Region:



New geographic groupings

The National Energy Board is adopting a new, more precise geographic breakdown within the Western Canada Sedimentary Basin (WCSB), used by petroCUBE. This study covers 18 geographic groupings, broken down based on categories selected to be reflective of similar natural gas production costs. This will allow a more precise analysis of the economics at play in the different geological formations.

The NEB will be using these groupings for this year's NEB *Short Term Natural Gas Deliverability* report, and for future NEB Energy Market Analyses on natural gas.