



CANADIAN ASSOCIATION
OF PETROLEUM PRODUCERS

Response to Panel Question on CAPP's Finding and Development Cost Methodology

In CAPP's presentation the Alberta royalty review expert panel there is a chart showing the finding and development (F&D) cost trend for natural gas in the Western Canadian Sedimentary Basin. This chart shows a five year rolling average from 1995 to 2006 as well as the single year finding and development costs (not a rolling average) calculated for two specific years 2000 and 2006, showing the dramatic increase in costs of finding and developing natural gas over the last few years.

As a follow up to CAPP's submission and presentation, CAPP was asked to provide details on its methodology for the F&D cost calculation. This detailed explanation follows:

WCSB 5-year rolling average Natural Gas Finding & Development Cost

CAPP's calculation includes the three provinces in the Western Canada Sedimentary Basin (WCSB) - Alberta, British Columbia and Saskatchewan.

CAPP calculates a 5-year F&D unit cost for natural gas in the WCSB by dividing the costs associated with finding and developing per mcf of natural gas by the amount of gas reserves added over a five-year time frame. For the subsequent 5-year period, the first year of data (both cost and reserves) is dropped and the next year of data is added.

The single year F&D costs are calculated with a similar methodology but with only the costs and reserves for that particular year. The five year rolling average smoothes out any potential anomalies in costs or reserves and helps avoid any substantial year-end reserve booking issues.

In CAPP's presentation, all data is sourced from the CAPP Statistical Handbook except the 2006 single year F&D cost of \$3.50/mcf which was supplied by Ziff Energy Group due to data reporting timeframes.

NUMERATOR = Costs

Costs¹ include exploratory drilling, development drilling, field equipment and gas plants, seismic and land. All of these costs are included in nominal dollars (as spent).

These are the current costs for the period (single year or 5 year rolling) being calculated and do not include prior period costs or future period costs.

Wells Drilled:

CAPP relies on WCSB Drilling data (metres completed) as published in the CAPP Statistical Handbook to allocate total spending into gas versus oil.

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DEMONINATOR = Reserves

Reserves² are the Annual Gross Additions of natural gas reserves combined with natural gas liquids reserves converted to natural gas equivalent. Established reserves are used to be consistent with the provincial data which we use for small pools. CAPP uses its annual survey of members for the large pool established reserves. It is important to note that reserves are only additions when they are extensions to existing pools or new pools, not acceleration of existing discoveries or development of prior undeveloped discoveries.

The annual gross additions include revisions to previous year's reserves for both natural gas and NGL's. In order to best reflect the actual results for activity for a particular year, CAPP uses the reserves prior to any significant one-time adjustments made by the provincial bodies in calculating F&D costs.

1. Source: CAPP Statistical Handbook. Original source is a Statistics Canada Oil and Gas Extraction Survey (450+ companies, ~95% of Canada's production).
2. Source: As estimated by CAPP and published in the CAPP Statistical Handbook. Based on a survey of major operators for large pools and adoption of provincial reserves for small pools.