Gas Exploration and Development Strategies in the Western Canada Sedimentary Basin

The Western Canadian Sedimentary Basin (WCSB) is a major source of natural gas supply for the North American market, producing more than 16 Bcf/d in 2000. Significant natural decline requires that in excess of 3 Bcf/d of new supply must be added each year simply to maintain basin deliverability constant. Sustaining production will challenge operators faced with decreasing initial rate per new well and increasing initial decline rates. During the decade of the 1990s, industry added over 25 Bcf/d of new western Canadian gas deliverability by connecting over 42,000 new producing well events.

What role did exploration and development strategies play in this gas supply growth? Based on the year of pool discovery and the year that the area was first connected, we define four E&D strategies. Each of the four strategies (Exploration, Connection, Development and Renewal) contributed a significant amount of gas rate additions.

This paper illustrates the annual trends in gas supply additions by strategy and their geographic distribution. We compare the portfolios of E&D strategies employed by the top 50 operators. A brief synopsis of a methodology for consistent measurement of gas rate-additions is also presented.

Careful analysis of these recent trends has yielded useful insights for operators evaluating their strategic choices for future investment in the WCSB.