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## FOR IMMEDIATE RELEASE

Calgary, April 14, 2008

# *Economic Ranking of New Gas Supply – a Pioneering Approach*

While natural gas prices are transparent across dozens of gas trading centers (e.g. Henry Hub, AECO, Dawn, WAHA, Opal) the actual full-cycle cost that producers incur to explore, drill, complete, and produce gas is not available. To fill that gap, Ziff Energy is proud to announce the release of a pioneering report that took 8 months to complete which analyses the full-cycle costs of new/marginal natural gas supply from 2 dozen North American gas areas, representing about 90% of new/marginal gas. Paul Ziff, CEO, observes that “by using *real* full-cycle costs, producers may be better informed to leverage their capital spending by growing their gas production in lower cost basins.”

The analysis is allocated into *6 primary gas types*:

- Conventional Gas – the original supply, although now fatigued
- Coalbed Methane – the 1<sup>st</sup> important Unconventional source, developed over the last 2 decades
- Tight Gas – the leading Unconventional supply
- Shale Gas – the most recent emerging supply source, found across the continent
- Offshore & yet to arrive Frontier supplies
- LNG – an increasingly important U.S. supply source.

This report integrates actual data from a wide range of industry sources and corporate services. These data sources include Ziff Energy’s 21<sup>st</sup> Western Canada F&D Cost Study, a dozen regional/basin operating cost studies, interviews with key regional producers, Ziff Energy’s 25 years of North American natural gas research and studies, corporate data, technical presentations, and industry research.

Ziff Energy has been conducting E&P research in the U.S. for well over a decade, and in Canada for a quarter century, combining both geological and engineering disciplines. Simon Mauger, Project Director and a 30 year exploration veteran, notes that “the study will help producers prioritize which gas basins to increase their activity in, and in a fraction of the time they would require if they tried to analyse the full cycle cost structure on their own.” A key feature of the report is that for many of the gas basins, full cycle costs are provided for *several play types*. For example, for Tight Gas in the Green River Basin in the U.S. Rockies, the study includes full-cycle cost detail for the Jonah, Pinedale, Washakie, Sandwash, Mesaverde, Wamsutter, Frontier, and Moxa Arch plays. While Alaska and Mackenzie Delta production is not yet flowing to North American gas markets, Ziff Energy has estimated their full-cycle costs including transportation tolls.

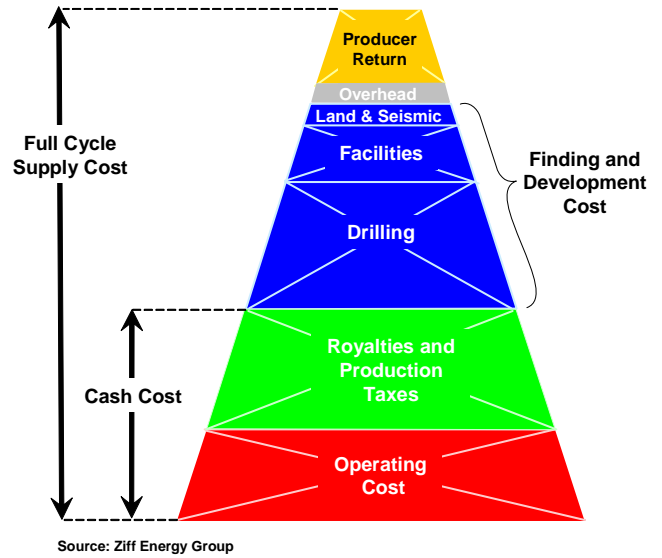
The report uses *clearly defined cost categories*. Operating Costs represent actual field operating expenses up to the point of gas sale. Royalties vary, although typically range from 12.5% to 20+%. Production Taxes (especially in the U.S.) are typically range from 4 to 15%. Finding and development costs include Drilling, Facilities, Land, and Seismic. Although the target Rate of Return on invested Capital varies among producers, Ziff Energy has utilized a 15% (before income tax) rate of return. **Figure 1** shows Ziff Energy’s allocation of full-cycle and cash gas costs.

For competitive analysis, the report includes cost scenarios for Middle East, Pacific Basin, and Atlantic Basin **LNG supplies** delivered to North American shores. Ziff Energy incorporates the *specific gas basin differentials* (from Henry Hub) to ensure an “apples to apples” cost comparison.

The report provides a *cross comparison of similar gas strategies*. Full-cycle Tight Gas costs, for example, are compared for Greater Green River, Uinta-Piceance, East Texas-North Louisiana, South Texas, Western Canada, and Arkoma. For CBM, full-cycle cost comparisons are compared for Powder River, San Juan, Raton, and Horseshoe Canyon (Alberta). Similarly, for Shale Gas, full-cycle costs for Barnett, Woodford, and Fayetteville are compared. Each of the 2 dozen gas areas has a 2-page summary including a map illustrating key geological features, a ranked list of the largest gas producers operating in the region, a tabular summary of specific gas basin costs, and the detailed cost for the many play types in that Basin. Initial gas well productivity and reserves per well are included as key parameters for client economic analysis.

**Figure 2** presents Ziff Energy’s updated gas resource triangle showing the types of gas that are on production in North America (above the red dashed line), and other possible gas sources (below the line). Increasingly, gas production is coming from smaller gas pools and non-conventional sources lower in the resources triangle. Ziff Energy believes Tight Gas has the highest recoverable resource potential, with the least amount of new technology required. However, new Shale Gas plays are generating a lot of “sizzle” and potential.

**Figure 1**  
**Gas Supply Cost Components**



**Figure 2**  
**Gas Resource Triangle & Remaining Potential**

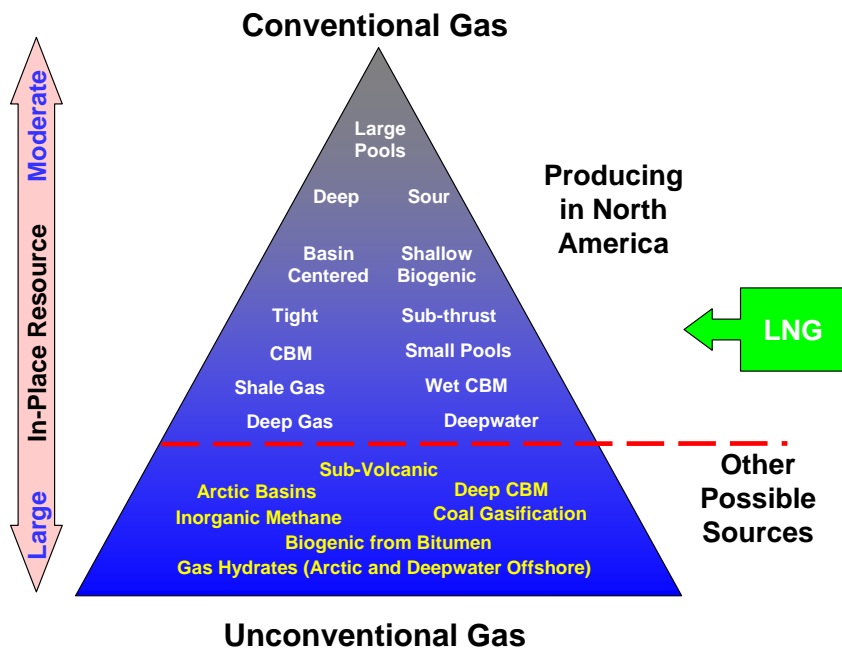
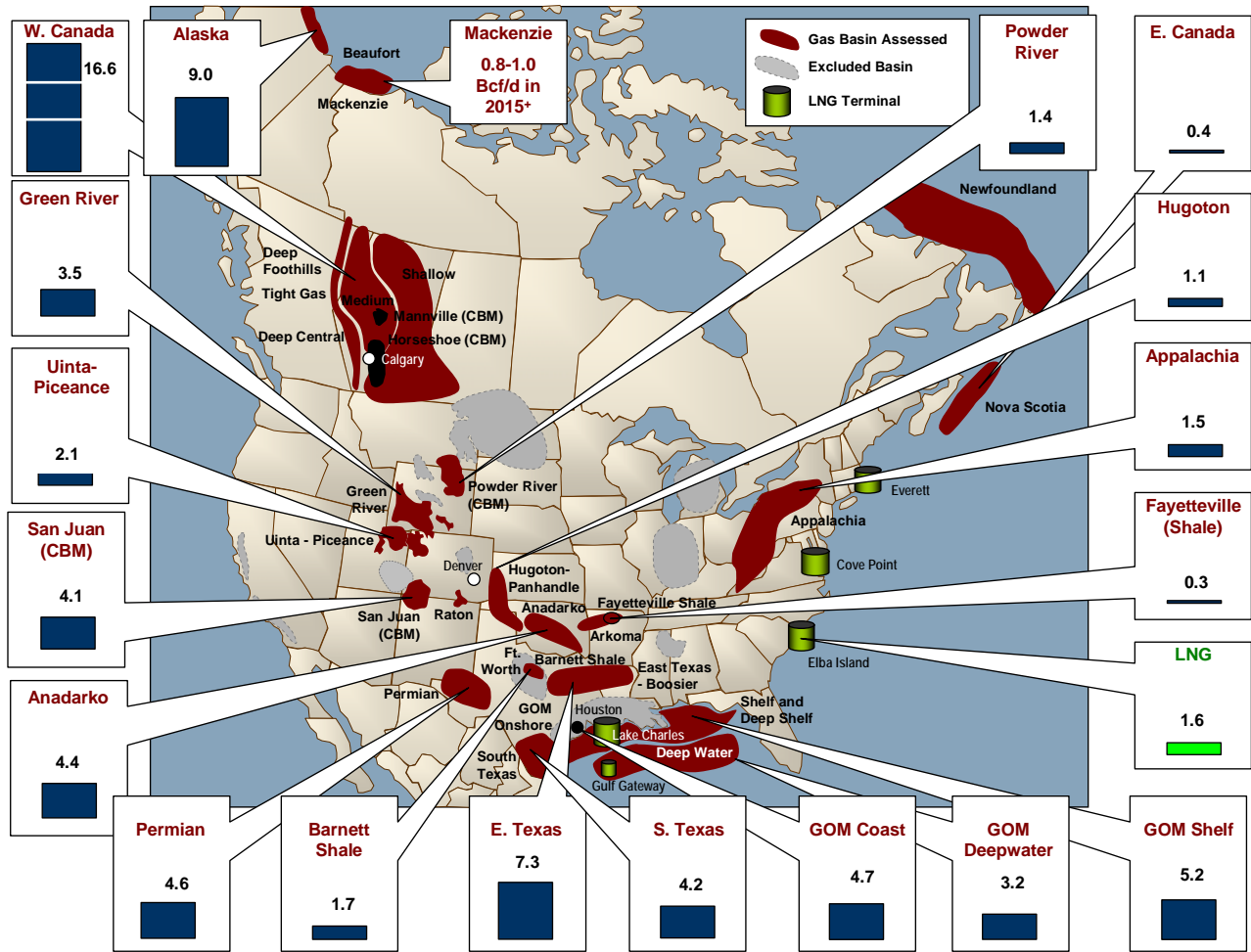


Figure 3 illustrates the *gas basins* Ziff Energy analysed, which represent about **90% of all gas produced in North America**. Where appropriate, Ziff Energy divides gas basins into smaller sub-basins for analysis. For example, Western Canada is divided into 6 areas: Deep, Foothills, Tight Gas, Conventional Medium Depth, Shallow gas, and CBM (dry and wet). The Gulf of Mexico is divided into Deepwater and Shelf (once dominant, now fading).

**Figure 3**  
**North American Gas Basins Analysed (Bcf/d)**



CEO Paul Ziff predicts that some of the findings will be controversial. “For instance, another energy consulting firm that conducted a continental analysis last year found that all the Canadian plays ranked economically in the most attractive half among North American plays, and the Canadian Foothills gas play was the lowest cost of the Canadian plays. Ziff Energy’s finding is that **5 of 6 of the Canadian plays rank in the bottom most expensive half**, and that Canadian Foothills ranks dead last of the 24 gas supply sources.” Ziff Energy believes our analysis is supported by industry transactions. For example, Marathon, Anadarko, and Samson, each of which entered Canada a decade ago, sold out all their assets in the last several years. And many leading Canadian gas producers, such as EnCana, Talisman, Petro-Canada, as well as a number of trusts, have invested in U.S. gas plays in the last 5 years.

Since no gas producers operate in all basins, this new report is intended to fill their knowledge gaps. The report is the 1<sup>st</sup> edition of what will be a biennial report, and the newest addition to Ziff Energy’s catalogue of over 170 gas or upstream studies.

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**Ziff Energy Group** is celebrating its 25<sup>th</sup> anniversary of providing sophisticated industry and operational business analysis and custom consulting to the worldwide energy clients. We have offices in Calgary and Houston, the primary gas E & P centers in North America. Our growing staff of 55<sup>+</sup> includes **many industry specialists** (engineering, geologists, and economists), with **15 to 30<sup>+</sup> years of domestic and international experience** in 60 countries worldwide.

