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## FOR IMMEDIATE RELEASE

Calgary, July 26, 2010

### *Economic Ranking of New Gas Supply*

While natural gas prices are transparent across dozens of gas trading centers (Henry Hub, AECO, Dawn, WAHA, Opal) the actual full-cycle cost that producers incur to explore, drill, complete, and produce gas is not readily available. To fill that gap, Ziff Energy is proud to announce the completion of our 2<sup>nd</sup> report analyzing the full-cycle costs of new/marginal natural gas supply from over 150 plays in 2 dozen North American gas areas which represent 90% of gas supply. 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*:

- Shale Gas – the most recent emerging supply source, found across the continent
- 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
- Offshore & yet to arrive Frontier supplies
- LNG – an important U.S. supply source.

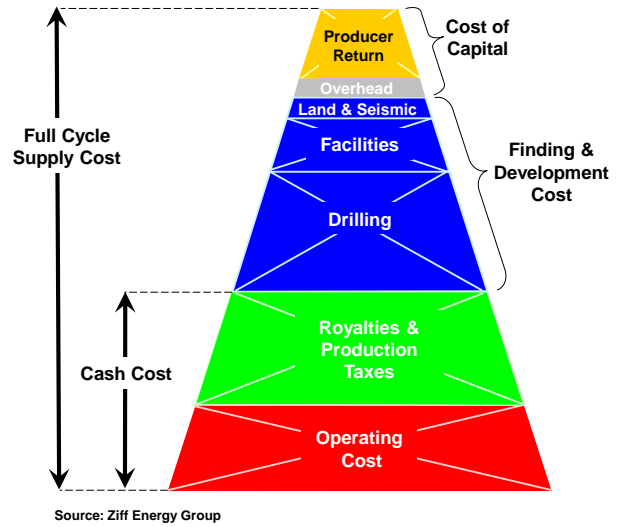
This second report integrates actual data from a wide range of industry sources and corporate services, including Ziff Energy’s 23<sup>rd</sup> Western Canada F&D Cost Study, several regional/basin operating cost studies, interviews with key regional producers, Ziff Energy’s 3 decades of North American 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 over a decade, and in Canada for a quarter century, combining both geological and engineering disciplines. Simon Mauger, P.Geol., 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 new report is that for many of the gas basins, full cycle costs will be provided for *several play types*. While Alaska and Mackenzie Delta are not yet flowing to North American gas markets, Ziff Energy estimates the 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 will utilize a 15% (before income tax) rate of return – about the cost of capital. **Figure 1** shows Ziff Energy’s allocation of full-cycle and cash gas costs.

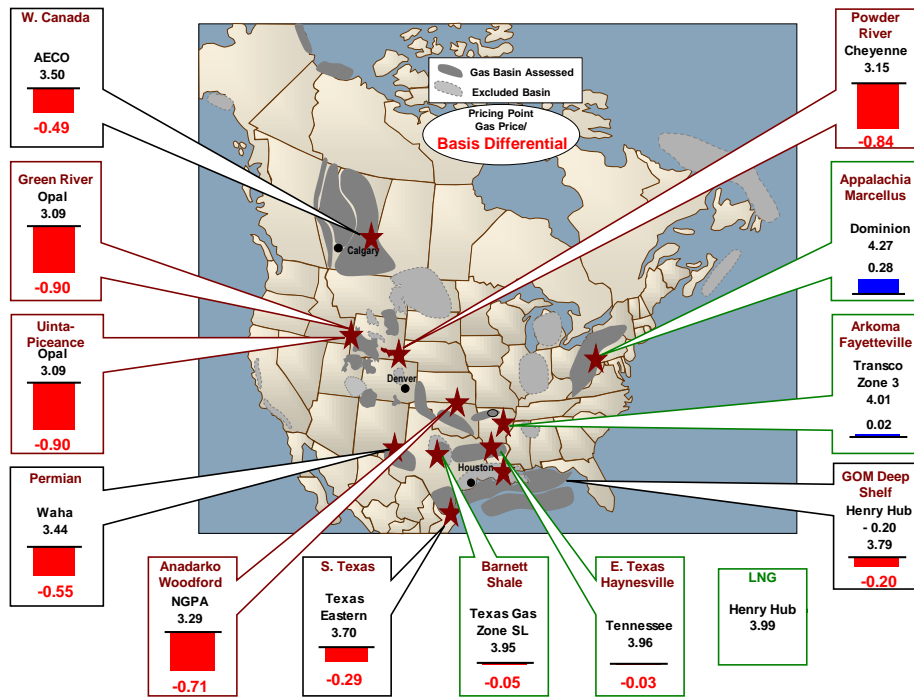
For competitive analysis, the report includes cost scenarios for Atlantic Basin, Middle East, and Pacific Basin LNG supplies delivered to North American shores. Ziff Energy incorporates the *specific gas basin differentials* (from Henry Hub) to ensure an “apples to apples” cost comparison.

**Figure 1**  
Gas Supply Cost Components



**Figure 2** illustrates the *gas basis differential* which can challenge the producer economics for basins far from markets.

**Figure 2**  
2009 Gas Price and Basis Differentials (US\$/MMBtu)



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The report provides a *cross comparison of similar gas strategies*. For Shale Gas, full-cycle costs for Barnett, Woodford, Fayetteville, Haynesville, Marcellus, and other Shale Gas areas are assessed. Similarly, 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 comparison compares Powder River, San Juan, Raton, and Horseshoe Canyon (Alberta). Each of the 2 dozen gas areas have 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 play types in that Basin. Initial gas well productivity and reserves per well are included as key parameters for client economic analysis.



Since no gas producers operate in all basins, this new report is intended to fill their knowledge gaps. The report is the 2<sup>nd</sup> edition and the newest addition to Ziff Energy's catalogue of over 170 upstream or gas studies.

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**Ziff Energy Group**, celebrating its 30<sup>th</sup> year of client service in 2012, is a leading North American energy consulting firm. On an international basis, Ziff Energy provides sophisticated industry and operational business analysis and custom consulting to the world wide energy industry in 30 countries. We have offices in Calgary and Houston, the primary oil and gas centers in North America. Our growing staff of 55<sup>+</sup> includes **many industry specialists**, with **15 to 30 years of domestic and international upstream experience**.

