



Hedging Spin: New Clarity for an Old Concept

Early this past fall, hedge funds got some unsolicited publicity when Amaranth Advisors LLC took a US\$3 billion hit on some misguided natural gas trading. Does this mean that risks have increased and that hedge fund investors should get out of the game? AO writer *Jason Beblow* shines a light on the merits of hedging.

In an industry fueled with unbridled optimism, hedging has become a dirty word because it somehow implies that prices have reached their peak. And while there is no shortage of speculation as to where the price of oil is headed, the only price forecast I have confidence in cycles up and down with volatility. Whether you work in the O&G industry or have invested in an O&G company, there is risk associated with oil and gas commodity prices and that risk is why there is money to be made. Managing risk sustainably and generating income regardless of the pricing environment is the real trick, and hedging can help make this a reality.

A hedge is typically a contract made with a counterpart designed to minimize exposure to an unwanted risk. As it pertains to O&G, a hedge basically involves fixing the price for a specified amount of energy product (oil or gas) as opposed to subjecting the price to market volatility. Hedging from a general perspective generates images of capped revenue and limited upside potential. However, looking deeper into not only what a hedge does, but where it is applied, sheds a new perspective on an old concept.

$$\text{Revenue} = \text{Price} \times \text{Volume}$$

(\$/boe) (boe)

Revenue Components:

Incoming Exploration and Production (E&P) cashflow is calculated by taking a unit of length (or production) measured in a barrel of oil or equivalent (referred to as “Volume” or “V”) and multiplying it by an associated price per unit (referred to as “Price” or “P”). Calculating the present value of revenue applies the forward prices of the commodity to the forward volume and brings it to date with a discount factor. It is important to look at the Price and Volume components of Revenue separately as both are integral to value creation of the company and isolating the components brings clarity to what is being given up and what is being received when it comes to hedging.

$$\text{Revenue} = P \uparrow \times V \uparrow$$

Swapping Price Upside for Volume Potential

By executing a hedge transaction that locks in the price component of revenue on a portion of volume, the expectation of upside on the price is eliminated for the

associated contracted volume. Although P upside for the hedge is reduced, the secured cashflow resulting from the transaction brings increased potential for finding new reserves and bringing on new production in the future. The ability to produce a commodity in the future through land acquisition, seismic activity, or exploration drilling sets up considerable future value through increased Volume potential. Securing cashflow for the acquisition of land at prices cheaper than experienced at the time of hedge execution allows for more land to be purchased, thus increasing the volume potential. In essence, what is given up on the upside of P hedge is compensated, and potentially outweighed, by what is gained in future V upside.

Reduction in upside of Price risk can lead to a greater overall value proposal because of the future potential of dimensional commodity volume growth.

Commodity Swings

The majority of E&P companies have both oil and natural gas in their production mix. In the last seven years, oil has swung from \$10 to \$31 back to \$16 and up to \$76

while gas has fluctuated from under \$2 to \$15 and back to \$5. These significant price swings have not necessarily been in tandem, as the historical correlation between the two has swung dramatically over recent years given the different global and continental factors influencing their respective pricing. While effected by factors other than oil, the situation with gas illustrates how quickly prices can erode as it is currently trading at levels approximately 30% of what it was trading at 18 months ago. This has led to poor wellhead economics; consequently, gas projects for some companies have been “shelved” and exploration reduced, thus lowering the future V component of revenue. In short, a company cannot bank on one of the commodities produced to be priced high while the other is low. Protecting and funding acquisition of volume potential for both commodities is imperative to sustained value creation.

Margin and Expense Hedging

Typically, a hedge deals with revenue. However, it would be more accurate to say that one type of hedge transaction deals with revenue. There are other types of hedge transactions that deal with expenses – for example, fixing the price of electricity, securing an office lease or



$$\begin{array}{r} + \text{ Revenue} \\ - \text{ Expenses} \\ \hline = \text{ Margin} \end{array}$$

contracting a drilling program. Consideration of both the revenue and expense hedge transactions in a robust program structure results in a reduction of risk, or hedge, on operating margin. By locking in the forward price on a portion of revenue sales to cover the forward purchase of fixed price expenses, the basic economics of operations are in essence hedged. This eliminates the possibility that, with only revenues hedged, expenses may continue to increase and eat into the operating margin – a common outcry of hedging critics. Similar to project-based hedging, where both revenues and expenses for the entire project are hedged, various tranches of oil & gas commodity production volume can be hedged in the same way to reduce the overall risk and lock comfortable margins being realized in the current pricing environment. In essence, by locking both the revenue and production expenses of a segment of volume, a portion of margin can be locked in.

A hedging program should cover more than just revenue; it should also cover expenses to reduce margin and income risk.

To effectively hedge margin, the various expense elements must be considered as each company has a slightly different treatment of expenses as they pertain to production. The costs of certain expenses float up and down in relation to the price of oil as a result of increased demand for the service. The rising costs of services lag behind the price movements of oil as the demand for the services is often a result of healthy commodity prices. Hedging of expenses can be as simple as fixing the unit cost of the activity (P) and the amount of days required (V) for the activity; similar to revenue hedges, both volume and price are fixed for a set duration of time. One of the perks to hedging expense activity would be the benefit to the service industry of stability and sustainability – longer term contracting of services at risk adjusted

prices would result in better planning and less stranded equipment at the bottom of commodity pricing cycles. Further, reducing some future V risk for service companies may be used by E&P companies to negotiate a reduced cost of service, which would lead to an increased operating margin.

Don't Hedge Away Everything

The portion of revenues required to be fixed, in terms of price to cover supply and demand driven expenses of operation, is unique to each company. By hedging only the necessary portion to create sustainable operations, the price risk position for the most part remains open and price risk movements are still realized. Energy trusts apply a fully hedged model and in essence become only production companies – the risk of exploration and early production being typically placed with junior and intermediate E&P companies. However, just as comfort is gained in knowing these E&P companies have insurance on their assets or vehicles, a basic amount of insurance on margin is also prudent.

Summary

Well, where the heck are oil prices going? If you know, then play oil futures and don't distort your risk with exploration and production because investment in E&P companies contain revenue price and volume risk as well as expense risk. There is no better time than the present to implement a simple and straightforward hedging program on revenues and expenses and it just so happens that the current price environment may be the impetus needed to instigate hedging decisions. Determining the corporate philosophy on price and volume risk with the two components in mind and the type of investment platform you want to offer investors are the first steps in deciding how much or how little you need to hedge to make your business sustainable regardless of the pricing environment. There's a saying in Alberta: 'Make hay while the sun shines.' Through effective hedging, we can continue to make hay even when the sun isn't shining as bright as it is today. 