Article 001: Integrity in Reserves Evaluation: how does this affect M&A, shareholders, companies…?

By sharing those articles, Evolution Resources SA ("*ER*") wishes to trigger discussions, raise questions and promote awareness within the community involved in Reserves and Resources evaluation. The content of the following article only reflects the view of the author, and is based on discussions with operators, auditors, banks and various players in the energy sector.

Introduction

Recently, the oil industry has changed substantially. We have moved from a world with oil trading at 110 USD/stb all the way back down to 40 USD/stb within just 18 months. Many projects were affected and reserves write downs are not unexpected as new developments or tail production become sub-economic, but how much of it is really down to the oil price rather than merely overstating previous estimates?

Discussing integrity within any major business can be quite controversial, yet it is at the centre of *ER*'s values and we believe that there is no better topic for a first article. Integrity has always been, and still remains a key factor for reserves evaluation. In a changing world, the ability of companies to make the most of their actual results, whether good or bad, is what will define the winners of tomorrow.

The motivation for this article was triggered by three comments made at recent public events:

1. An executive in a commercial bank: "We know that SPE PRMS[1] does not apply to Nigeria because of bunkering, so we discounted the reserves"
2. A senior partner of a major auditing firm: "We need to book the full potential of the assets or the numbers would just be too low"
3. A senior executive in the banking sector: "If you do not book reserves based on the full potential of your assets, you will not get to work for oil companies".

Integrity in Reserves Evaluation

Since the Shell reserves de-booking of 2004, reserves evaluation has become an increasingly important part of the oil and gas business, yet the very concept of "reserves" is still widely misunderstood and under-utilized. Reserves are not "just a number" providing an official statement about the remaining volumes that a company will likely produce, it is a major component of the financial statement of a company and may affect potential

[1] SPE PRMS guidelines:
http://www.spe.org/industry/docs/Petroleum_Resources_Management_System_2007.pdf

impairments. Reserves are also of utmost relevance to banks in enabling them to assess and review potential loans. If used correctly, reserves evaluation provides management with a reality check about how efficient the projects are in comparison to the business plan, where there may be potential areas at risk and how to mitigate those risks. It is also an intrinsic part of any Competent Person Reports ("CPR") providing investors with valuable information about the return on investment that can be expected, based on a reasonable and unbiased technical and commercial estimate. Ultimately, the purpose of reserves estimation is to protect shareholders by providing an estimation of the cash value of a company at a given point in time, and under a given set of acceptable assumptions.

Gaffney Cline recently published a very interesting article[2] stating: "*The aim of a CPR is to provide a responsible, unbiased and independent opinion on the technical aspects of the company, with the ultimate purpose of informing and protecting investors*". This appears like a good description but we would argue that the goal of a CPR is not limited to the technical aspects of the company. Since such requires reserves information, it must embed the "*commerciality*[3]" of any potential project. More importantly, in view of recent de-bookings and observed trends, one may wonder if those evaluations (regardless of who is the evaluator) can always be considered "responsible, unbiased and independent".

In early 2004, Shell made the headlines because their proved reserves were overestimated. Eventually, the company had decreased their 1P reserves by 24%. Over the last few years, we have seen companies with activities in the North Sea, Africa and the Middle East reducing their mid case reserves by as much as 50%, yet this was hardly noticed (unless you were directly impacted as a shareholder). Why have oil companies with a substantial amount of "certified" reserves made such huge losses, or disappeared completely? Was it really all just down to the oil price?

Companies / Operators

We all like big numbers, and oil companies are no different. Whilst major reserves additions or a good reserves replacement ratio (RRR) will generally have a positive effect on share prices, it will also affect annual bonuses and operator's KPIs are often misaligned with the interest of shareholders (e.g. compensating management for matching production targets at a loss during low oil prices[4]).

During internal evaluation, companies are frequently keen on reporting high reserves. This is reinforced by the erroneous idea that Business Planning and Reserves Evaluation are the same exercise. While certainly closely related, the purpose of business plans should be to fully develop the assets and maximize the value of the company. On the other hand, reserves estimations are constrained by specific guidelines and provide a screenshot of the company's situation at a given point in time, usually based on current conditions (or realistic conditions according to historical data). Over the past few years, we have seen companies using the

---

[2] http://gaffney-cline-focus.com/the-competent-persons-report?utm_medium=email&utm_campaign=The%20Competent%20Persons%20Report%20FINAL&utm_content=The%20Competent%20Persons%20Report%20FINAL+CID_88628826e5b4c4139aaaa65047482b62&utm_source=campaign%20monitor&utm_term=Find%20out%20more

[3] Ref: PRMS guidelines

[4] Ref: http://www.ft.com/cms/s/0/faa32c0e-576a-11e6-9f70-badea1b336d4.html#axzz4HOm4wuLv

2P case to book unsanctioned development projects, or to overestimate the outcome of approved projects based on business planning assumptions[5], but does that really matter for managing efficiently a company?

When reporting reserves to top management, we are making a statement confirming that a certain amount of oil should be recovered, based on a portfolio of projects for which a budget has been approved (or is almost certain to be approved in the near future). If reserves are overstated, then more investments will be required to actually deliver production targets. Hence, in the long term the target volumes may be matched but the cash flow of the company will be substantially reduced because of severely underestimating CAPEX and OPEX. More importantly, a company may not optimally allocate its capital as decisions are based on the wrong assumptions. This can go unnoticed in a 110 USD/stb environment, when new projects remain cash flow positive and can still compensate for the lack of delivery of the base case. However, when the oil price drops, it is time to reassess reserves, clean the books and start reviewing those projects into details.

Auditors

Auditors are *unbiased and independent*, yet there are surprisingly large differences between evaluations completed by different - technically sound - auditors. In spite of what was said above, some auditors choose to publish "reserves", or CPRs, accounting for the full potential of the asset. This means that the volumes published often refer to a "business plan case", instead of a "reserves case". Eventually, reality will catch up and we face three scenarios

1. The company keeps on investing, and provides new projects compensating for the overbooking. In this case, only the cash flow, thus the NPV, of the company is affected.
2. The company does not invest in new projects, and we are facing a potentially major de-booking.
3. The asset is farmed out and the reserves bookings are reviewed. In this case, however, some stakeholders may be exposed to litigations.

In a regulated market, such as the overseen by the SEC, auditors make sure that their estimation is fully backed-up by a set of consistent data. However, the SEC only focusses on proved reserves. Even though reporting probable reserves is now allowed, it is only optional[6]. Therefore, if the value of a company is estimated on a 2P case, regulatory bodies may not be reviewing the results and the auditor has the flexibility to use business plan cases or split conditions in guidelines to increase reserves. This leads to increasing the 2P case while being able to remain fully compliant with SEC on the 1P case. Whether this is justified or not is a long debate that needs to be looked at on a case by case basis but, in the absence of a regulatory regime, the auditor has little to lose, until a de-booking has to be explained.

---

[5] Note that in rare cases, business planning assumptions have reduced 2P reserves (e.i. for very mature assets). This will be discussed in another upcoming article.

[6] Comment for the SEC representative at annual EGRC meeting, April 2016: "We now allow reporting the 2P case, but for some reasons companies chose not to do it…"

Banks

Banks are amongst the primary users of reserves reports. Whether it is for reserves based lending (RBL) or project financing, reserve reports should provide an unbiased view on the expected cash flow profile and financial health of a company. As some reserves reports cannot be relied upon, the bank must seek alternative solutions to manage risks. Three main approaches can be observed in banks:

1. Focus only on the 1P case: By estimating the financial viability of any project based on the 1P (or "proved") case, a bank may rightly assume that a company will likely exceed expectations. Per SEC definition, proved reserves should follow the principle of reasonable certainty, defined as "much more likely to be achieved than not"[7]. On the positive side, this would protect banks in regards to companies reporting under the SEC regulations. However, this does not protect investors against major unpredictable events impacting the industry whereby one still needs to use common sense. For example, in December 2014, the oil price used for SEC reporting according to the 12 months average rule was 102.1USD/stb, yet Brent spot price on 31st of December was 62.2USD/stb.
   Another drawback of using the 1P case is to potentially miss out on opportunities. In green fields, the reserves spread is typically large because of the high level of uncertainty. In such circumstances, the 1P case could be very low, or even sub-economic, purely because it is constrained by a set of guidelines. Yet, the investments case might be reasonably robust. By definition, 2P reserves cases are supposed to represent a more realistic view of the expectations and could even offer a very attractive upside.

2. Alternatively, risks could be insured against a potential loss. A detailed technical report by an established auditor will assist banks into convincing insurance companies that the investment is reasonably sound. However, CPR will often focus on the full technical potential of the asset (i.e. a business plan case) instead of the technically and commercially[8] viable reserves behind a project, hence reducing the risk profile of the investment. Again, this is not a problem in the 110USD/stb environment, as most projects are valuable and the return on investment may only be reduced. In a 40USD/stb environment, however, an insurance policy will have to offset potential losses.

3. Last but not least, banks may account for risks by using discount factors. The most commonly used are reserves adjustment factors (RAF) or risk adjusted discount rate (RADR). Interestingly, almost 90% of the users of RADR choose to increase the discount rate in their evaluations[9] (therefore decreasing the NPV) in order to account for reserves risk. Considering the volatility of the market over the last few years, the fact that banks are more concerned about reserves evaluation than about the oil price says a lot about their trust in evaluation reports...

---

[7] Ref SEC: Modernization of oil and gas reporting – RIN 3235-AK00, chapter 2.E.
[8] Note that the term "commercial" also account for the all, regulatory requirements, countries' approvals, company commitments… toward the project
[9] Ref SPEE 35th Annual Survey of Parameters Used in Property Evaluation, June 2016

Insurances, funds and shareholders

Insurance companies have to rely on operators not defaulting, or that on average, the premium charged to banks will offset losses. Over the last few years, high oil prices ensured that we would no see major defaults, but in today's environment, it will be interesting to see how insurances will manage potential losses, and how reserves reports will be considered in the future.

Under ordinary circumstances, overstating reserves will not cause a company to default. However, it will almost certainly lead to capital mismanagement and, more importantly, mislead investors by substantially altering the risk profile of a company. Funds and shareholders are somehow in a similar position as insurance companies. They will be directly affected by reserves overstatements and by the false risk profile of a company. From the perspective of those end-users, overstating reserves in official reports is just dishonest. Whether the certified reserves are artificially increased to farm-out the assets, or to raise cash and encourage investors, the share price is extremely likely to decrease in the long term. In some cases, such as after a M&A transaction, this might lead to litigation. However, not everything is bad with the low oil price: whilst it affects cash flow, it also provides a great opportunity for companies and auditors to sanitize the books.

Conclusion

In many cases, 2P reserves are overestimated in a similar manner to that we observed in the Shell proved reserves case in 2004. Overestimations usually remain unnoticed during high oil price environments, as the cash flow of companies allows them to compensate for potential reserves losses with new projects, nevertheless the NPV will be affected. This is mainly observed in reasonably green assets, as overbookings are highlighted when the reservoirs become depleted or when assets are farmed-out, in which case the new operator is likely to adjust reserve numbers.

While banks are mainly affected in case of massive defaults, the real victims of overestimating 2P reserves are players at the end of the financial value chain, such as shareholders, insurance companies and funds. When the oil price decreases, projects offsetting those overbooking become cash flow negative and disappear. Even if companies do not file for bankruptcy, the massive reserves reductions will affect a company value.

As for funds and shareholders, M&A deals are probably one of the main areas affected by overbooking 2P reserves. Interestingly, the lack of court cases can probably be explained by the fact that with no real authority controlling 2P bookings (e.g. on the London Stock Exchange), it is easy to blame it all on the low oil price.

The old statement: "everybody does it" is unfortunately often true, but some companies are slowly understanding the value of using correct numbers. Knowing the future cash flow is key for efficient budget planning and project optimization. In a volatile low oil price, we can no longer afford to waste capital on marginal (or sub-economic) projects to compensate for underperforming assets, and today most operators are reviewing their portfolio and refocussing their investments. The good old days when we could say ironically "what is a hundred millions USD between friends" are truly gone…

Author

Dominique Salacz

Director

Evolution Resources SA

place Charles-David 5,

1290 Versoix (Geneva)

Switzerland