

Restoring confidence in reported oil and gas reserves: a practical approach

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Since Royal Dutch/Shell's January announcement of a 20% downward revision in its proved oil and gas reserves, the Securities and Exchange Commission (SEC), foreign regulators, and, of course, US plaintiffs' lawyers have besieged energy companies worldwide. The developments at Shell and other companies have caused many analysts and investors to lose confidence in reported reserves. This, in turn, has diminished the stock-market valuations of many exploration and production companies, despite historically high oil prices.

Institutional investors, audit committees, rating agencies, and independent accountants are asking tough questions and clamoring for reassurance that managements have accurately calculated and disclosed oil and gas reserves. To underscore this point, Rep. John Dingell (D-Mich.), ranking member of the House Energy and Commerce Committee, has recently initiated a broad probe of reserve-accounting procedures.

Upstream company executives need to be proactive. Given the SEC's new

policy of opening broad investigations into entire industries when problems surface at a single company, and the provisions of the Sarbanes-Oxley Act that call for more-frequent reviews of periodic reports, oil and gas companies should expect this year's filings to be scrutinized heavily. Additionally, with the increasing number of reserves-related class-action suits (such as a \$5 billion suit against Shell) and growing ranks of investors concerned and vocal about reserves matters, a "wait-and-see" approach could prove costly in the extreme.

Noncompliant proved reserves estimates typically result from companies' (1) misinterpreting complicated, and often outdated, regulations, (2) lacking adequate (or failing to properly implement) booking, auditing, or disclosure procedures, or (3) failing to properly reconcile SEC requirements with international or home-country disclosure obligations. Fortunately, managements can address all of these factors.

Red flags

As executives review their companies' procedures for calculating and disclosing proved reserves, possible "red flags" include:

- Lack of third-party or independent internal review of proved reserves estimates.
- Management bonuses directly or indirectly linked to proved reserves.
- Internal procedures subject to varying interpretations or applied in practice differently for different properties.
- Reserves bookings in conflict with those of other companies reporting reserves in the same property.



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- Significant proved reserves booked in deepwater fields or based on advanced technology.
- Restatement of reserves by other companies in the same property.

SEC disclosure rules

Oil and gas companies that file periodic reports or registration statements with the SEC are subject to a myriad of often-inconsistent reporting rules and requirements. Depending on whether the reporting company is a domestic or foreign issuer, it has to take into account the requirements in Regulation S-K, Regulation S-X, and FAS 69, as well as Form 10-K, 20-F, and the SEC's Industry Guide 2. Foreign companies must also simultaneously comply with international disclosure requirements.

Much of the complexity involved in calculating and disclosing proved reserves results from the overlap between engineering, legal, and accounting considerations. In general, companies may include as proved reserves only those estimated quantities of hydrocarbons that they have demonstrated by actual production or conclusive formation tests to be economically and legally producible under existing economic and operating conditions.



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Therefore, it is not enough to know that there is oil or gas in the ground. It is equally important to estimate, with “reasonable certainty,” how much of it is there, demonstrate a commercially viable means of extracting it, and identify a willing and able buyer. The amount of reserves a company can report as “proved” depends in large part on economic producibility of the hydrocarbons, which in turn is influenced by technology and the price of oil and gas. If these criteria cannot be met to the SEC’s satisfaction, reserves are not “proved” and cannot be included in SEC filings.

This can have a huge impact on a company’s balance sheet and create significant disparity between a company’s publicly reported reserves and internal estimates.

Reservoir engineering is a subjective process of estimating underground accumulations of oil and gas, which cannot be directly measured. The accuracy of any reserves estimate is a function of the quality of available data, engineering and geological interpretation, and professional judgment. The defining characteristics of proved reserves require a company to predict future production based on current conditions and certain assumptions. Different, but equally valid, assumptions might lead to significantly different results. Estimates can vary greatly from quantities ultimately recovered. While generally cautioning investors against unwarranted reliance on their reserves estimates and related calculations, such as PV-10 calculations, companies must be careful to balance such language so that it does not dilute the “reasonable certainty” with which a company must be able to estimate the economic recoverability of its proved reserves.

The gap between the SEC’s concept of proved reserves and what, in practice, may be economically recoverable is enlarged by new technologies. For example, the reservoir information

provided by 3D seismic data and molecular formation dynamic tests can greatly increase the amount of reserves estimated to be economically recoverable from a reservoir but does not necessarily fall within the scope of “conclusive formation tests” under SEC guidelines.

Internal procedures

Empirically, in past reviews of reserves estimates, the SEC has focused its comments on the following items:

- The criteria and methodology relied upon in the calculation of proved reserves.
- The use of additional supporting data or explanation with respect to determinations of economic producibility.
- A company’s internal review process of reserve calculations.
- The existence of an independent review process.

We recommend that upstream companies implement a five-part action plan in order to ensure the adoption, implementation, and maintenance of adequate reserves calculation and disclosure procedures. While no two firms are alike, the following steps are appropriate for a wide variety of companies, both in the US and overseas, and, we believe, represent a developing standard for the exploration and production industry:

- *Conduct a thorough internal audit of prior and currently planned public disclosures regarding proved reserves and internal procedures for calculating such reserves.*

The review should initially focus on proved-reserves disclosures for the last 2 years and should include a comprehensive review of all trigger events, accounting, testing, and any management discussion and analysis (and the underlying data thereof), related to the booking of

Red flags in reserves reports

Lack of independent review
Bonuses tied to proved reserves
Inconsistent internal procedures
Conflicts with others in same property
Deep water and advanced technology
Restatements by other companies

Steps in a reserves action plan

Thorough audit of disclosures, procedures
Independent investigation, verification
Internal reserves audit
Independent accounting, legal review
Guidelines for future disclosures

proved reserves. To conduct this review, the company should establish an internal reserves review team (RRT) with the authority and budget to conduct its review free of institutional pressure to reach specified conclusions. Ideally, the team should be created in consultation with legal counsel (to establish scope and operating procedures), have at least one representative from each of the company’s accounting, engineering, and legal departments, and exclude the company’s chief executive and chief financial officers.

The RRT should pay particular attention to reserves booked in any field where production has significantly declined, any geographic areas where a substantial percentage of proved reserves has been booked, reserves booked in areas for which license periods are due to expire, and any proved reserves included in a prior public filing that (1) were not proved through use of a conventional flow test or (2) included amounts of reserves below lowest known hydrocarbons.

To the extent the RRT discovers material issues with previous disclosure, the company should carefully consider (including consulting outside counsel) whether previously reported proved reserves need to be restated.

- *“Expertize” proved reserves figures through independent engineering-firm investigation and verification.*

Companies should seriously consider retaining independent engineering firms to review their proved reserves. Companies may opt for varying levels of review, depending on their needs and internal expertise. The primary benefit of a third-party review is independent corroboration of reserves estimates, which will augment regulator and investor confidence.

- *Establish or strengthen existing internal auditing of reserves and require involvement of personnel outside the line of business who report directly to independent directors.*

Whether or not they decide to engage independent engineering or consulting firms, all companies should ensure that they have a strong, independent, internal reserves-audit procedure. The reserves-audit team should also regularly evaluate whether the policies set forth in the formal guidelines (described below) are being consistently implemented and adhered to. The internal reserves audit function should be incorporated into the company's operating procedures and adequately staffed and funded.

- *Retain independent accounting and legal advisors to review reserves-booking policies and procedures and to make appropriate recommendations.*

To ensure independence, we recommend that this review not be conducted by the company's legal counsel involved in preparing any of the disclosure of proved reserves, or by the accounting firm used to audit the company's financial statements. This recommendation is not intended to require the company to reaudit financial statements or other information, nor is it necessary to engage nationally recognized auditors, provided that the accounting expert selected has expertise in the interpretation and application of

the relevant regulatory requirements.

- *Develop and implement formal procedural guidelines for future disclosure consistent with SEC requirements.*

Guidelines established by the RRT and management should be formally adopted and incorporated into the company's operating procedures governing the preparation of disclosure for SEC filings, including annual reports and offering documents.

These procedural guidelines should include, at a minimum, an annual review by the internal audit team or independent engineering firm of proved reserves, regular training and education of employees involved in the company's reserves-management system, and a procedure to monitor SEC rules and guidance and update company guidelines as necessary. It should also provide clear criteria for recognizing proved reserves, automatic review triggers for fields with declining production, audit-committee oversight, elimination of reserves-linked bonuses for reserves-management personnel, and a method for monitoring partner reserves bookings.

Benefits of implementation

The benefits of implementing these measures extend beyond the primary goal of quality control of reserves calculation and disclosure. Additionally, these steps will help to:

- *Facilitate verification of disclosure controls and procedures and internal controls over financial reporting.* The Sarbanes-Oxley Act imposes new disclosure requirements with respect to internal controls over financial reporting, including a management report on internal controls, as well as an attestation from independent auditors with respect to management's findings in the report.
- *Minimize liability of certifying offi-*

cers. The Sarbanes-Oxley Act requires CEO and CFO certifications as to the accuracy of information contained in a company's periodic reports and imposes significant liabilities with respect to this requirement.

- *Bolster investor confidence and provide management with credible support.* Especially in the current environment, management needs to be in a position to defend proved reserves numbers to a company's audit committee, independent auditors, the SEC, and, equally importantly, institutional shareholders.

Faced with an urgent need to ensure accuracy of proved reserves estimates, oil and gas companies should promptly implement appropriate measures, including a review of recent disclosures of proved reserves, independent verification of reserves estimates, and formal reserves-management procedures compliant with SEC requirements. Companies should consider the foregoing recommendations in the context of their own distinctive operations, organizational structures, and management objectives and seek outside legal and accounting advice as necessary. **OGFJ**

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