

Being Proactive on Reserves Write-Downs and Impairments

The Royal Institution

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Introduction

- ❑ The recent sharp decline in oil prices has highlighted the issue of reserves to companies and their shareholders, lenders, and other stakeholders
 - Significant write-downs already announced
 - For some companies, this is more than just a “reporting issue”

- ❑ Low oil prices: a challenge but also an opportunity
 - Identify the impact
 - Seek mitigating actions

Today's Agenda

- ❑ Reserves
 - What are Reserves?
 - How does a fall in oil price affect Reserves?
 - What is happening to Reserves at year-end 2014?
 - What could happen at year-end 2015?

- ❑ Impairments
 - *E&Y*

- ❑ What to do?
 - How can companies make positive changes in terms of reserves and related processes, planning, and portfolio management?

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What are Reserves? – 1

- ❑ “... quantities of petroleum anticipated to be **commercially recoverable** by application of **development projects** to known accumulations from a **given date forward** under **defined conditions**.”

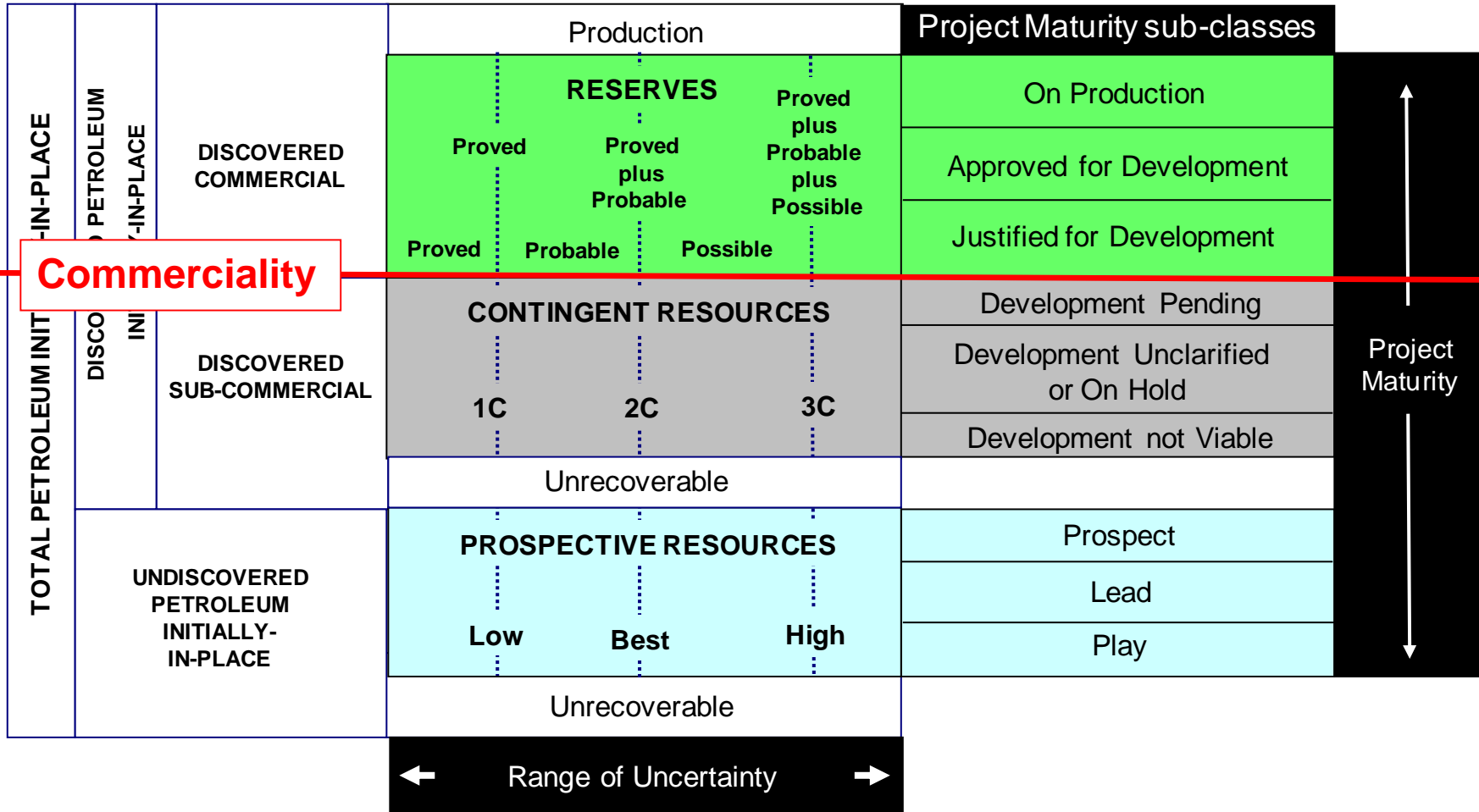
- ❑ Must be
 - Discovered
 - Recoverable
 - Remaining (as of the evaluation date)
 - **Commercial**
 - Based on the **development project(s)** applied

Determination of Commerciality

- ❑ Firm intention to proceed ...
- ❑ ... in a reasonable time frame
- ❑ Development project meeting economic criteria
- ❑ Market
- ❑ Facilities (export route, access to technology)
- ❑ Permissions (legal, contractual, environmental)

- ❑ Commerciality requires reasonable expectation that all of the above will be forthcoming

SPE PRMS Framework

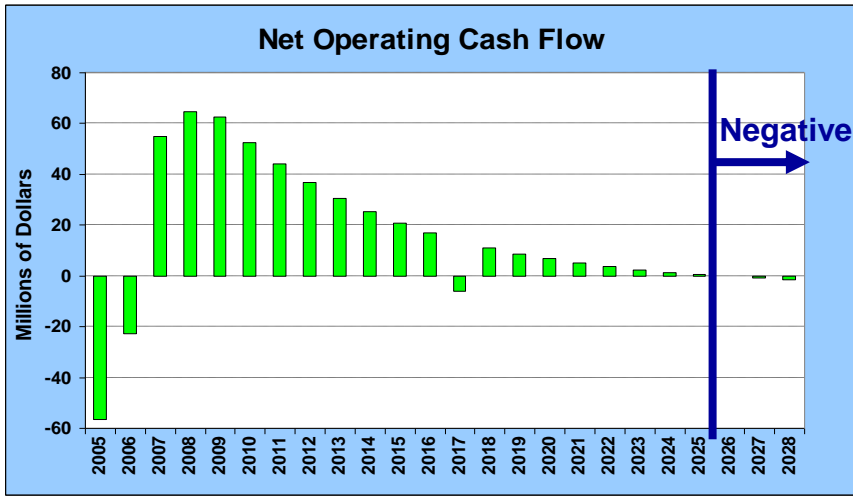
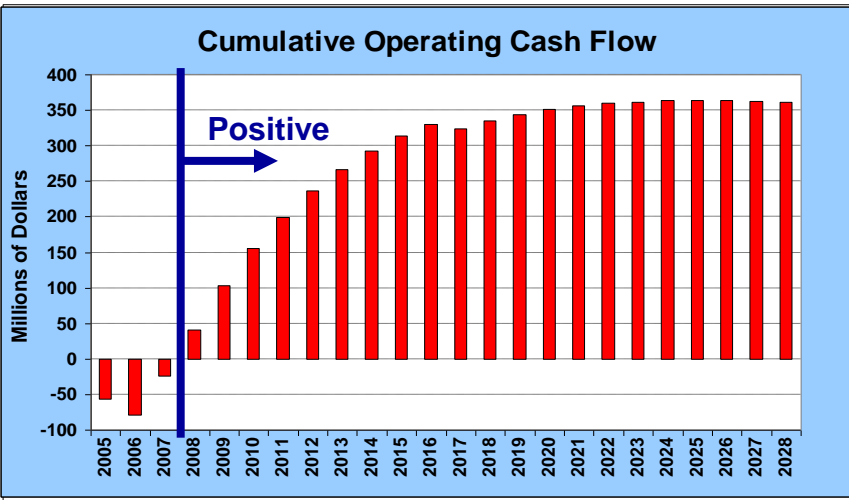
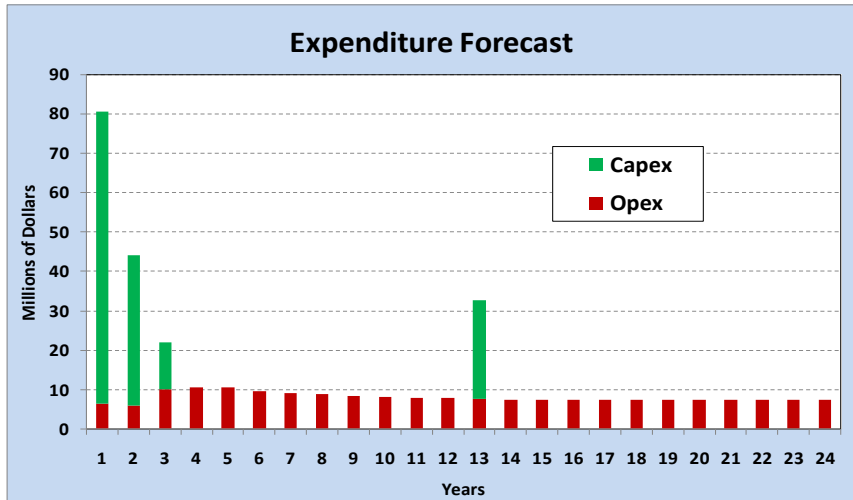
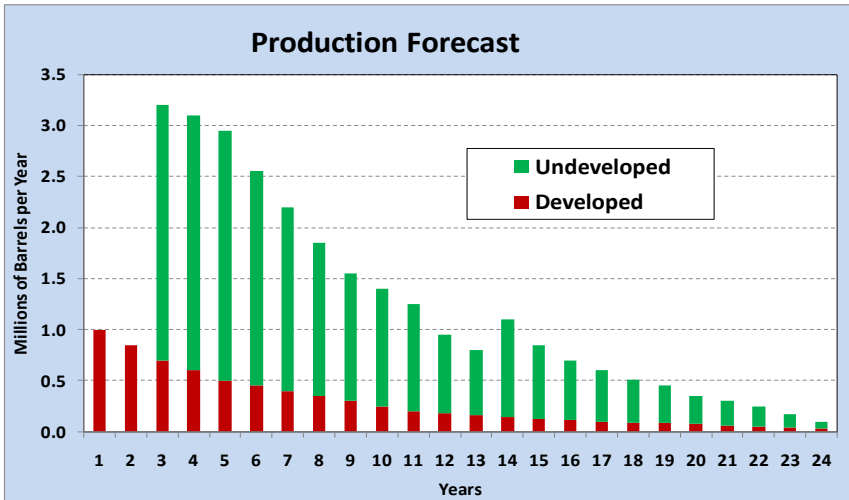


Levels of Certainty

Estimate	Deterministic	Probabilistic
Proved (1P)	Reasonable certainty	P90 (or more)
Proved plus Probable (2P)	Equally likely to be greater or less	P50 (or more)
Proved plus Probable plus Possible (3P)	Low probability of being exceeded	P10 (or more)

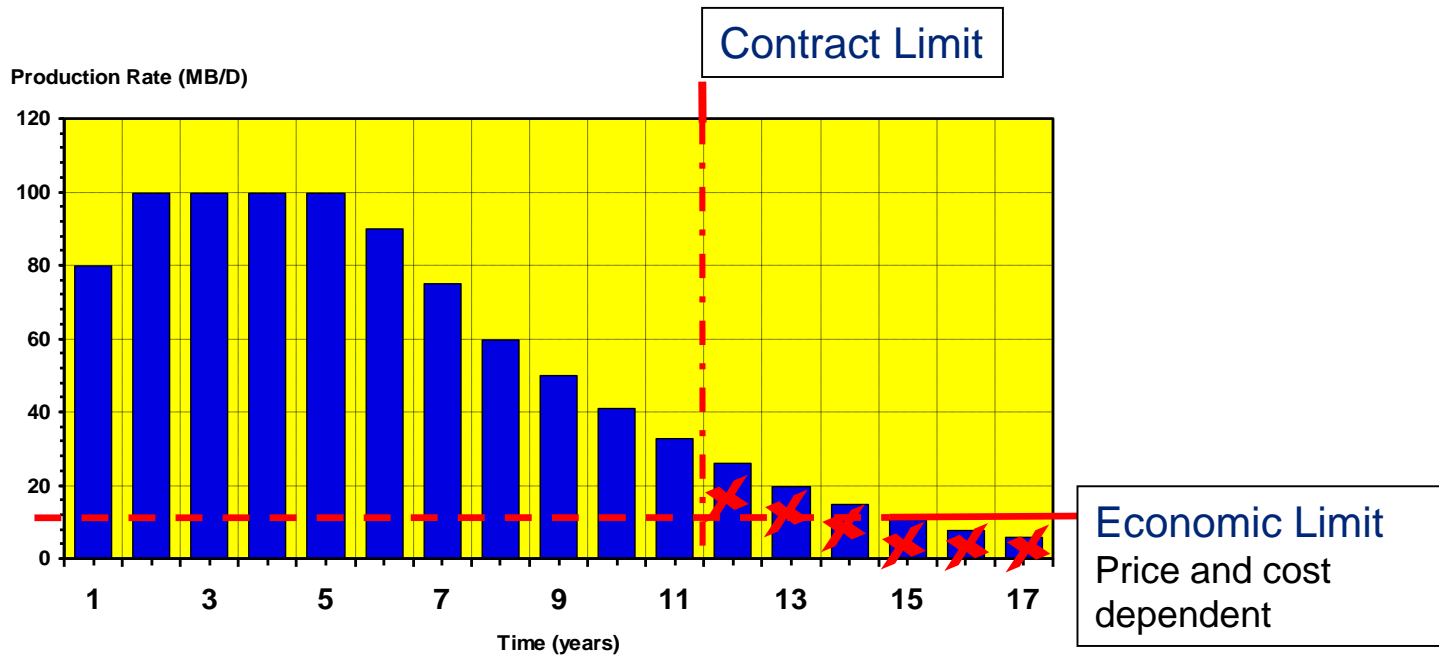
Reserves are estimated (not calculated or measured)

Economic Limit Test



What are Reserves? – 2

- The summation of future production from a given date forward to the economic, contract, or lease limit



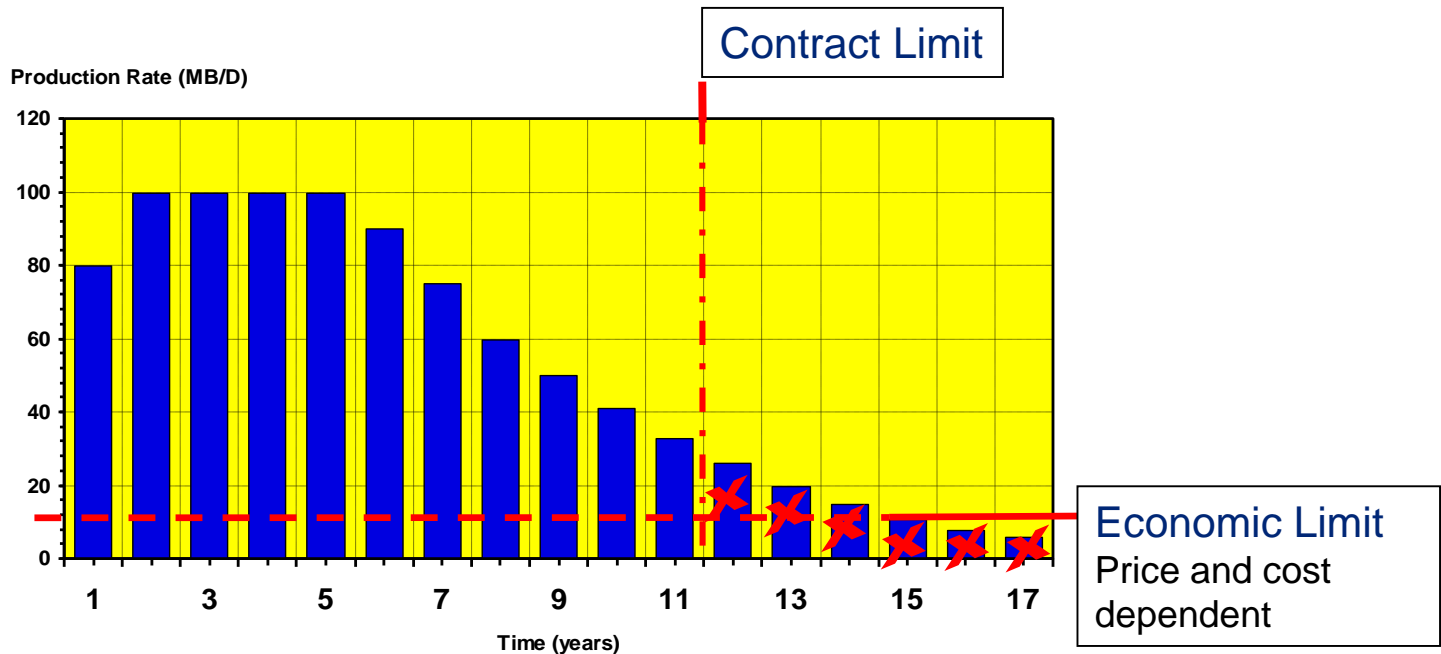
How Does a Fall in Oil Price Affect Reserves?

- ❑ A fall in oil price may:
 - Reduce Reserves
 - Have no effect on Reserves
 - Increase Reserves

- ❑ But in all cases, it will reduce the **value** of the Reserves

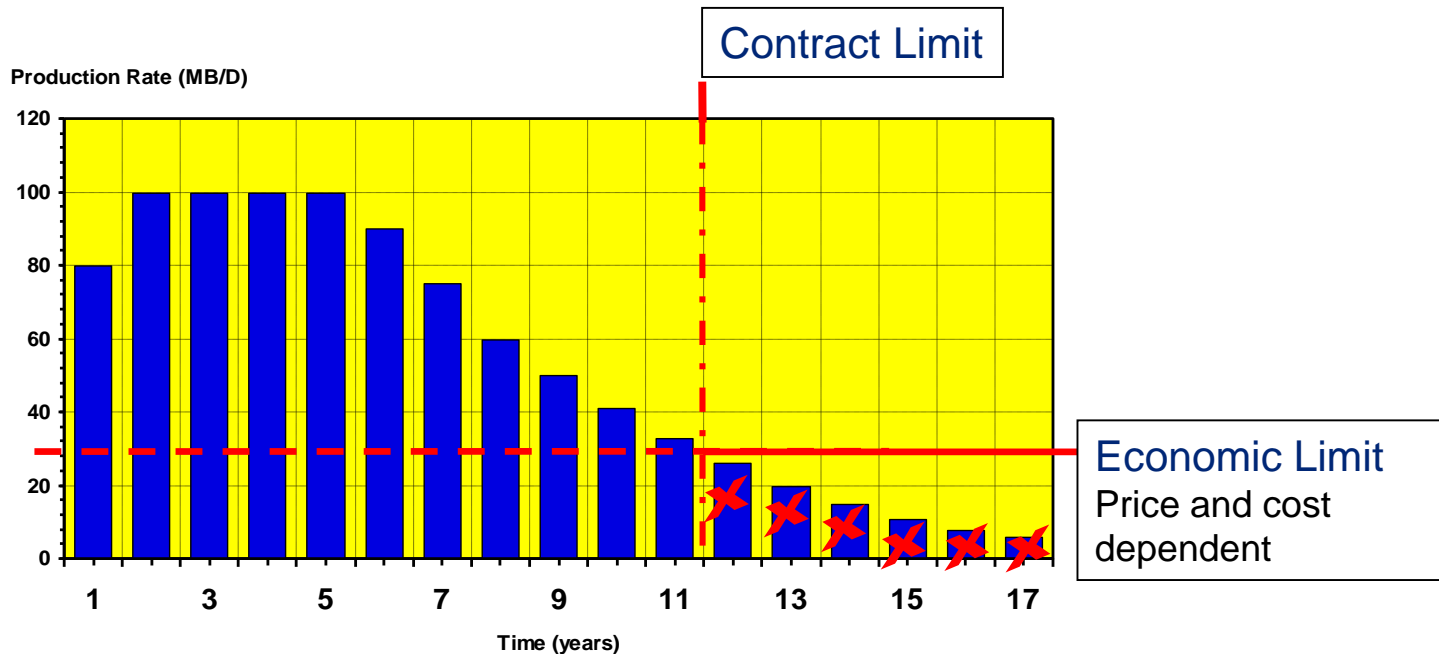
Impact of Oil Price on Reserves – 1

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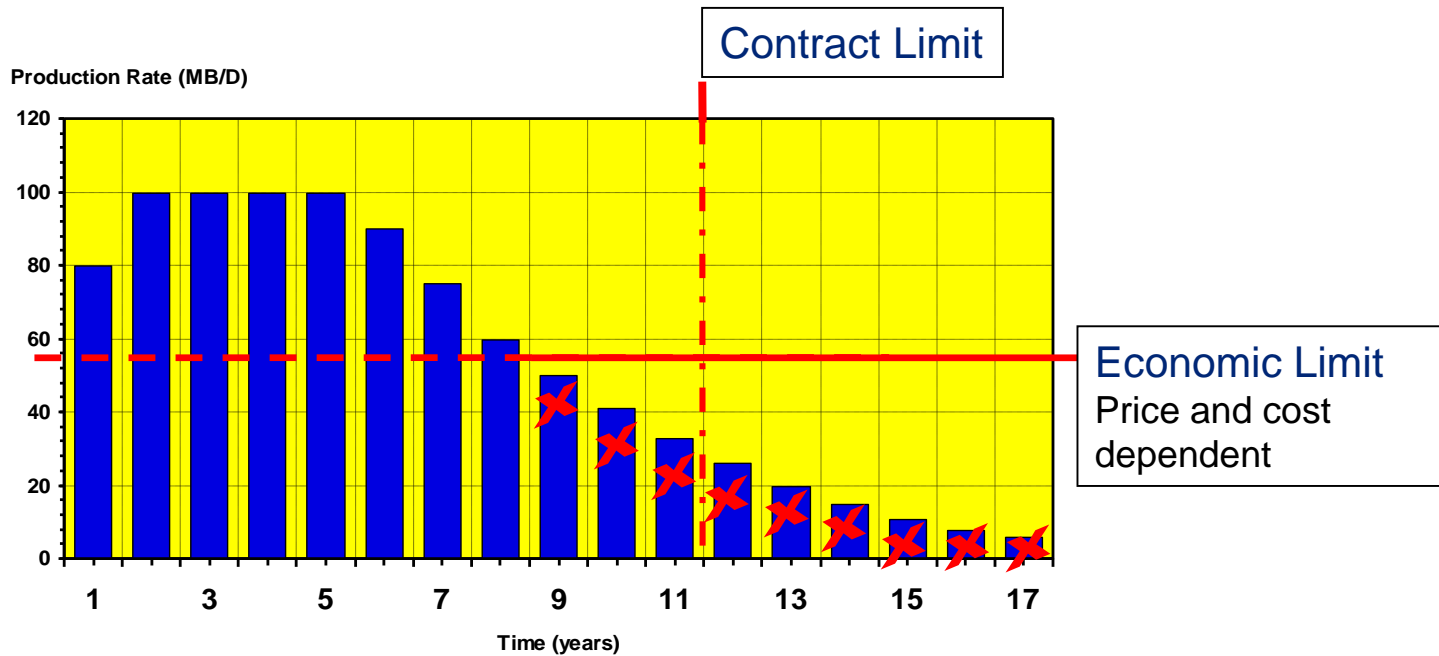
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Impact of Oil Price on Reserves – 1

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Impact of Oil Price on Reserves – 2

- A fall in oil price can (and usually will) increase Reserves under a Production Sharing Contract (PSC)
 - Contractor revenue comprises Cost Recovery and Profit Share
 - If oil price is lower, more barrels are needed to recover the same amount of costs
 - Contractor Profit Share will be reduced, but this is usually outweighed by the increase in Cost Recovery barrels

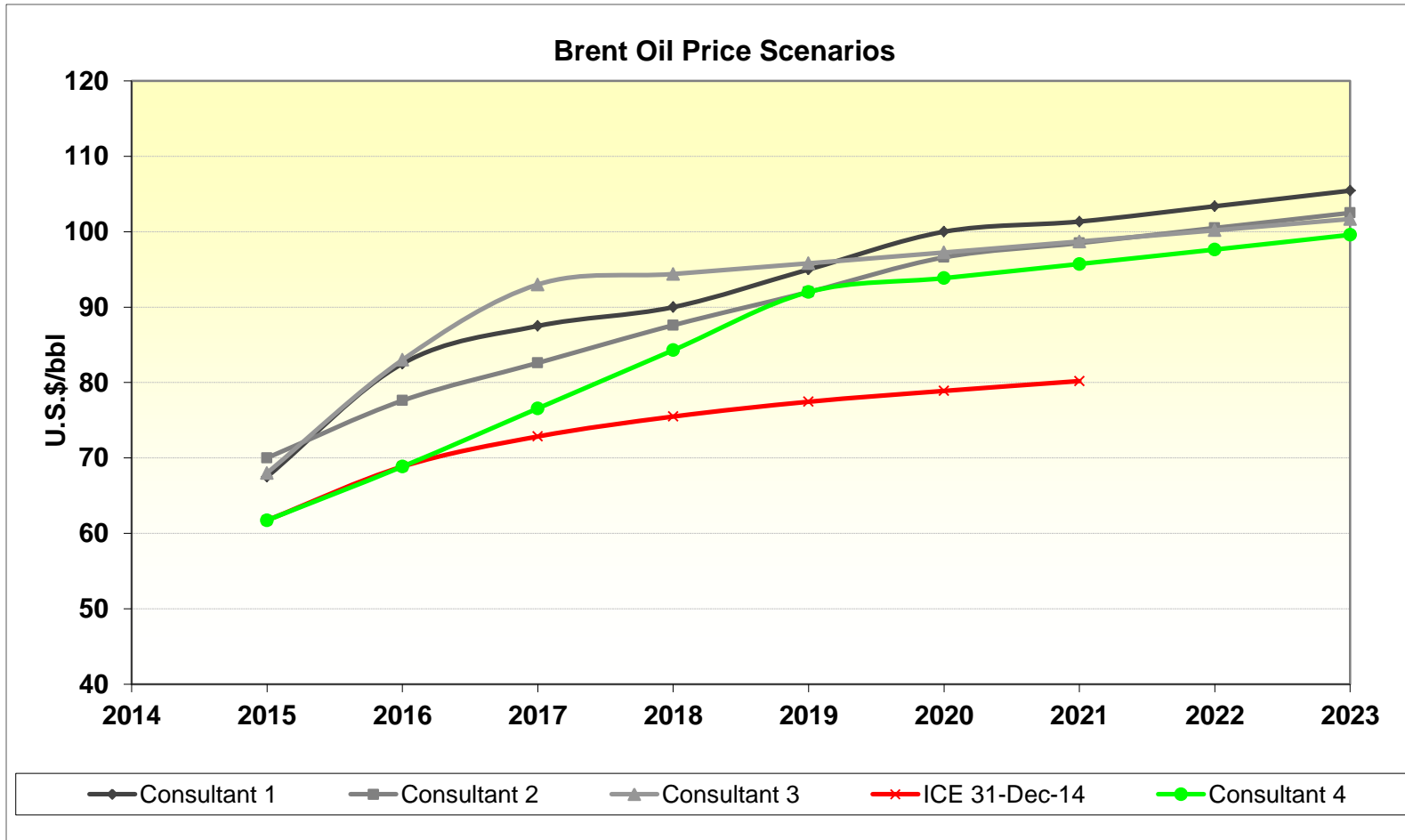
What is Happening at Year-End 2014?

For Reserves reporting:

- ❑ Companies reporting under SEC Rules must use a fixed price of:
 - **US\$101.30 per barrel for Brent Crude !**
 - This is the average price for 2014 (1st day of each month)

- ❑ Companies reporting under the SPE/AAPG/WPC/SPEE guidelines or the Canadian system (NI51-101 – COGEH) can use:
 - **Any “reasonable” oil price forecast**

Some YE14 Brent Crude Oil Price Scenarios



What Could Happen at Year-End 2015?

- ❑ If prices stay low for most of 2015:
 - Companies reporting under SEC Rules may have to use a much lower price than at end 2014
 - What is accepted as a “reasonable” forecast may also have to be revised downwards

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What To Do? – 1. Portfolio Management

- ❑ Assess the impairment risk at an early stage
 - Sensitivity analysis to key variables (such as low oil price)
 - Identify specific assets at risk

- ❑ Adjust capital allocations
 - Appraise or develop certain assets versus others
 - Defer or advance capital expenditure
 - Manage the movement of Contingent Resources to Reserves

- ❑ Rebalance the portfolio through acquisitions, divestitures, and relinquishments

- ❑ Use a conservative approach to forecasting future prices and production, and hence mitigate against future unwelcome surprises

What To Do? – 2. Plan Ahead

- ❑ Maintain a focus on key issues to avoid “11th hour” problems with reserves and financial auditors
 - In the planning/budget cycle, not just at year-end

- ❑ Engage early to understand the implications of significant decisions such as
 - Deferring capital projects
 - Acquisitions and divestments
 - Marginal projects

- ❑ Avoid being forced into a “fire sale”

What To Do? – 3. Other Actions

- ❑ Review debt covenants
 - Renegotiate if necessary

- ❑ Manage communication with investors
 - Have good news to announce at the same time as bad
 - Develop a good track record
 - Demonstrate prudent asset management by minimizing exposure to sudden market fluctuations

What To Do? – 4. Take Independent Advice

- ❑ A key element of a robust view of a company's assets and reserves

- ❑ An independent expert or 'competent person' can provide an opinion on the 'reasonableness' of the reserves and ensuing fair value estimates
 - Essential in many transactional and reporting environments
 - Equally important to the companies themselves

- Challenging the robustness of internal work

- Demonstrating to the wider community that every effort has been made to avoid surprises
 - Particularly important in times of volatility when assumptions are 'under the microscope'

Backup

What is an impairment and how is it calculated?

- ❑ An impairment is a write-down in the value of an asset on the books of the company

- ❑ There are three steps to identify, recognize, and measure the impairment of an oil and gas asset:
 - Indicators of impairment
 - Testing for recoverability
 - Calculating the impairment loss

Indicators of Impairment

- ❑ External indicators may include
 - Significant and unexpected decline in the market value, such as oil price
 - Material changes to the market, including demand or technology shifts or the emergence of a major new supplier

- ❑ Internal indicators (within a company) may include
 - Damage to major process plant
 - Changes in cost of capital
 - Deferral of capital investment

Testing for Recoverability

- ❑ If the estimated future undiscounted cash flow of an asset is greater than its carrying value
 - No impairment is required

- ❑ Otherwise, an impairment may be required, depending on the “fair value” of the asset

- ❑ The undiscounted cash flow is calculated based on
 - The Proved Reserves of the asset
 - *What assumptions on oil price??*

Example

- ❑ If an asset has
 - A carrying value of US\$100 MM
 - An undiscounted forward cash flow of US\$90 MM
 - A fair value of US\$70 MM

- ❑ Then the asset
 - Fails the recoverability test
 - Must take an impairment of US\$30 MM

What is the Fair Value of an Asset?

- ❑ The price that would be received to sell an asset (or paid to transfer a liability) in an orderly transaction between market participants at a specific point in time

- ❑ From a commercial point of view, the fair market value depends on many factors
 - The Proved Reserves of the asset
 - The Probable and Possible Reserves of the asset
 - Further potential upside (undeveloped discoveries, exploration prospects)
 - Economic and sovereign risk
 - Other benefits, encumbrances or charges
 - The competitive state of the market at the time

- ❑ *From an accounting point of view?*