

Exhibit 190

Unknown

From: Sidle, Rod RE SEPCO
Sent: 27 September 2002 05:26
To: Pay, John JR SIEP-EPB-P
Subject: Reviewed document

Importance: High
Sensitivity: Confidential

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John,

This is a very interesting document. I have provided comments both within the text of the document itself and as general thoughts in a separate text. I realize my comments are not as focused as they could be on a specific solution. Since the changes noted are a significant revision and come with out a chance to discuss this more, I am just a bit unsure just what the best answer may be. Thus I would consider how more discussion with knowledgeable parties could help find the best approach.

As noted in my text, I greatly appreciate both the need for solutions and the opportunity to provide my thoughts.

Regards,
Rod



Delete Reserves
Management Sum...



General Comments
EP PV Reserve...

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Note For Discussion (with comments as shown using "track changes" by Rod Sidle)

EP PROVED RESERVES MANAGEMENT

The system that is used by EP for managing additions to the proved reserves inventory was last updated in 2000 with the introduction of monthly / quarterly tracking of performance during the year via EPMIS. This improved the predictability of the year-end result, but it did not remove the tendency of the OUs to report last-minute changes that either had not been foreseen or which, for various reasons, might have been suppressed in the EPMIS reporting.

This feature of the reporting system is unlikely to be completely overcome, since most OUs do not complete their annual review of reserves on producing assets until the final quarter of the year. Nevertheless, further improvements to the overall management system have been identified and are proposed below for consideration and approval where appropriate. These are elaborated below in the following categories:

- 1) Proved Reserves Replacement Management
 - 1a) Major or Unusual Reserves Changes
 - 1b) ExCom Review
 - 1c) Latest Estimate and "Road Map"
 - 1d) Reserve Opportunities Catalogue
 - 1e) Potential Reserves Exposure Catalogue
 - 1f) Scorecards
- 2) Reserves Administration System
 - 2a) Schedule of Authorities and Process Work Flow
 - 2b) Data Management
- 3) Corporate Experience
- 4) Competitive Intelligence

The primary internal EP customer for reserves information and performance monitoring is ExCom. The management system that accompanies it must ensure that an appropriate level of control exists with respect to external disclosure of proved reserves information and that, within the bounds set by the SEC rules and the delivery potential of the EP portfolio, performance is managed to the maximum benefit of shareholder value.

Following the introduction of the Technical and Operational Excellence (T&OE) drive within EP, the Hydrocarbon Maturation Forum (HMF) and in particular the Hydrocarbon Maturation Leadership Team (HMLT) will also have key roles to play both as customers for the information and as instigators of activities within the overall hydrocarbon maturation process that ultimately will yield proved reserves additions in the future. (See general comments at the end of the document for T&OE and HMF potential additional roles.)

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1) Proved Reserves Replacement Management

Recent years have witnessed dramatic swings in Shell's performance on proved reserves replacement, with poor performance lately being exacerbated by acceleration of additions into the period 1996 - 1998. Results in that period were higher than those of any of our main competitors. It is proposed that in future a greater, and earlier, level of management attention is given to this matter, ensuring that new bookings are made in full cognisance of the short to medium-term performance potential of the portfolio. This will be underpinned by the following:

1a) Major or Unusual Reserves Changes

It has been suggested that a system be introduced by which major or unusual reserves changes would be notified to the centre, for approval, in a manner analogous to the Group Budget Proposal. A suggested implementation would be for the OUs to submit a *pro forma* notification to EPB-P, for discussion with the OU, Reserves Auditor and Regional Business Advisers as appropriate and culminating in ExCom sanction, or otherwise, of the proposed change. Such a system would certainly help to underpin the Latest Estimate for major changes, but the following concerns are raised:

- it is not clear how the system could be enforced reliably (agree)
- many of the variances from plan that materialize at the end of the year emanate not from major plan elements (that can be tracked easily), but from revisions to previously registered estimates, usually made in the final quarter of the year. (basically agree but this can be more fully managed than currently - see general comments on reserve change ties to Business Plan)
- the adoption of such a system would help to ensure that the endorsed bookings would indeed be made at year-end, but could not guarantee it (see 2 below) (agree)

Consequently it is not clear how such a system would improve on the established role of EPB-P in maintaining contact with the OUs and regularly checking on developments in each OU's latest estimate. Thanks to the efforts of previous Hydrocarbon Resource Coordinators, it is already automatic practice in many OUs to seek the views of EPB-P on reserves changes that are being contemplated, with supporting documentation being either volunteered or provided on request.

On balance, it is recommended simply to reinforce the role of the Coordinator (how about the role of the OU Reserves Focal Point? - see general comments), rather than to impose further bureaucratic requirements on the OUs. It should suffice to "formalize" the arrangement by including in the Petroleum Resource Volume Guidelines a statement such as: "First-time proved reserves disclosures (confided - this is the first reference to a "disclosure" as part of the process or problem. Have OUs been making public announcements (disclosures) of project proved reserves without EPB-P involvement? If so, this is fine - I just was not aware of this issue. Or perhaps you mean "booking" (meaning to include in official company proved reserves estimate) - if this is so, consider the term "booking" as this is the standard term) for major new projects, or any other substantial change to proved reserves estimates, must be raised and discussed with the Group Hydrocarbon Resources Coordinator as far as possible in advance of the intended disclosure date so as to allow for adequate review and support of EP management and, if necessary, the Reserves Auditor."

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Action: EPB-P to reinforce contacts with OU Reserves Focal Points and senior development engineers on reserves maturation matters. Arrangements are to be in place to ensure that cover would be provided in the event of prolonged absence (e.g. by involving T&OE hydrocarbon resource maturation staff in the regular consultation of OUs).

1b) ExCom Review

In addition to the existing reviews which take place in January each year (at which point it is generally too late to materially influence the result of the previous year) and at other times *ad hoc*, formal reviews will be introduced during the reporting year itself. These will provide ExCom with the opportunity to guide the end result for the year (within the margins that can be accommodated by the SEC rules) and to identify actions required to control either under-performance or unnecessary new bookings.

January: EPB presents for approval the final results for the previous year (this review is already part of the established system and no changes are proposed).

July: EPB will present:

- The current Latest Estimate and "Road Map" (see 1c below)
- The outlook for the plan period (based on Capital Allocation)
- The Reserves Opportunities Catalogue (see 1d below)
- The Potential Reserves Exposure Catalogue (see 1e below)
- Recommended Actions

ExCom will review the outlook for the year with reference to the aspired performance target (or target range). ExCom will endorse or otherwise amend the Recommended Actions, implementation of which will generally need to be secured via the RBDs and new business development teams.

November: Similar format to the July review, but with increased emphasis on targeting a specific end-year result or range of results. The review will yield:

- An endorsed list of major year-end reserves additions
- An endorsed list of major reserves de-bookings to be made (with reference to the Potential Reserves Exposure Catalogue, see 1e below)
- To the extent that the portfolio will allow (i.e. generally in the more buoyant years), a clear and endorsed list of projects or potential bookings that can be used as a "float" with which to control the year-end result. EPB-P will direct OUs to include or exclude these from their final submissions as required.¹

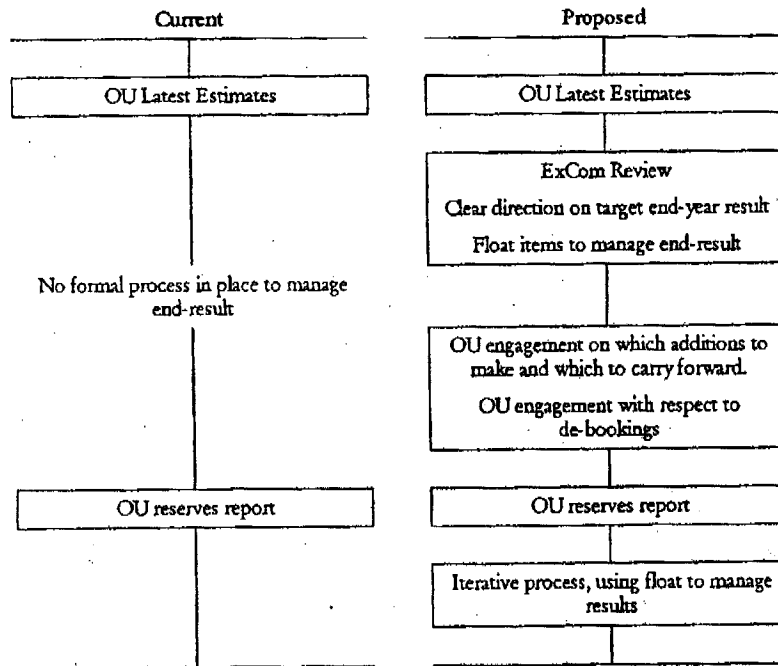
¹ Projects falling into this category will generally be those that are between VAR3 and FID, since for these there is latitude in the interpretation of the SEC rules on whether or not they should be disclosed. There may be other cases that could also be used in the float: these will be brought to ExCom attention as they are identified. Examples might include exploiting uncertainty in the proved reserves associated with licence extension, or gas sales volumes that are covered by the various shades of certainty leading up to the final signing of a sales contract.

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- Clear direction on the minimum and maximum levels of reserves replacement that are to be targeted.¹
- Agreed actions required of OUs and EPB and EPF in preparation for the year-end reporting of reserves data.

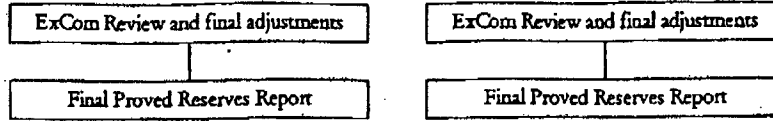
Approval of the external auditors for such an approach will be required, in support of which it is noted that most, if not all, major competitors appear to have similar processes in place. For example: Enterprise routinely reviewed reserves replacement in November or December each year; it is understood that BP plans to book Angola Block 18 reserves in 2002 only "if required" (final project sanction will be in 2003); Texaco used to complete the process that was its equivalent of the OU reserves report in early December each year. Competitor Intelligence on ExxonMobil from SEPCo interactions on Aera: EM carefully manages the reserve reporting process including annual review of every "OU" changes by corporate auditors (staffed by Reserves manager with several regional auditors) that are then further reviewed and "approved" by EM management. To accommodate this work EM "closes their reserve books" on December 1 (using estimated December production to produce YE data.) These practices, together with the very stable performance history of ExxonMobil, suggest that competitors exploit the interpretive margin of the SEC rules and equip themselves with data early enough in the process to enable them to control the final result.

A schematic of the proposed system, compared with the current system, is as follows:



¹ It is suggested that clear justification would be required for "accepting" performance below 100% reserves replacement in any given year. 140% reserves replacement is generally accepted to be consistent with Shell's current 3% a.a.i. production growth target. Consequently it would be prudent to constrain reserves additions to this figure (when circumstances allow) and to assist performance in future years by carrying forward as much as possible of the surplus.

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Action: EPB-P to prepare material for the first ExCom review in November 2002. EPB-P to develop a procedure for ensuring consistency between ExCom decisions and year-end OU reserves reports, with early engagement of OUs that might be required to assist in the management of the results (i.e. through the inclusion or otherwise of certain bookings).

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1c) Latest Estimate and "Road Map"

EPB-P currently compiles the monthly Latest Estimate data provided by the OUs via EPMIS (although, in general, OUs do not significantly update their Latest Estimates in the months between quarter closing). This system, together with the dialogue between EPB-P and the OUs that goes with it, provides an adequate means of tracking progress made against plan on major reserves additions.

The reserves "Road Map" was introduced in 2002 to better quantify the uncertainties in the Latest Estimate data - specifically the potential impact of opportunities that are not yet incorporated in the LE and those elements of the LE that are under threat. As the year progresses the LE should be definable with increasing certainty and consequently the "Road Map" will become decreasingly significant. The current 2002 Latest Estimate and major "Road Map" items are summarized in Appendix C.

Starting with 2003, the Latest Estimate will be defined and tracked with reference to specific major elements in the plan, giving an increased level of transparency and resolution compared with the current system that is focussed on overall OU figures. This will be done by EPB-P in consultation with the relevant OUs, but without additional formal reporting requirements from the OUs (see also 1a).

1d) Reserve Opportunities Catalogue

EPB-P will maintain an inventory of opportunities for significant new reserves additions that may be realizable in the short to medium term (current year plus two). (This is a potentially problematic proposal, depending on the work required to deliver the "realizable" additions. If this is just to have ExCom agree with additions not yet approved from completed technical and operational (like drilling) work, this is fine. If this potential requires not yet done work to be completed (technical studies, operational work execution, etc.), then it is not clear how resources needed will be so quickly mobilized to accomplish this in a given year of reserve issues. If the realization is over the two year period, how is this different from just highlighting reserve addition contributions of proposed projects at CAF/Plan time?) This will help to focus attention towards corrective action that is required to underpin current and plan year performance. The catalogue will be presented periodically to ExCom for review (see 1b).

Input will be solicited at least quarterly from the RBDs, OUs, and from the T&OE, new business development and the Hydrocarbon Maturation Leadership teams.

Action: EPB-P to consolidate the initial draft of the catalogue in time for the November 2002 ExCom review proposed under (1b). A working draft is included as Appendix A.

1e) Potential Reserves Exposure Catalogue

EPB-P will maintain an inventory of all proved reserves that could be under threat of debooking in the event of failure to execute projects or failure of projects to deliver as expected. This will promote transparency on these issues and will be reviewed at least annually by ExCom (see 1b). Particularly in times of surplus reserves additions potential, pre-emptive action may be taken to remove the potential exposure from the inventory.

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The catalogue will be maintained in close consultation with the Reserves Auditor and the OUs as required. Each item will be reviewed at least once per year by EPB and the HMLT, recommended actions being put forward for ExCom consideration (see 1b).

(This proposal seems logical but may have legal problems either internally or with our external auditors. One could ask if you have such concerns about the likelihood of a booked project realizing reserve estimates, then it by definition does not meet the reasonable certainty standard and should be debooked immediately from proved. However, if we include a rule that the sum of all volumes in this category cannot exceed x% (the level needed to be "material"), perhaps we can argue that we are just keeping track of potential future "immaterial" changes.)

Action: EPB-P to consolidate the initial draft of the catalogue in time for the November 2002 ExCom review proposed under (1b). A working draft is included as Appendix B.

1f) Scorecards

When reviewing the end-2001 OU reserves reports, the Group Reserves Auditor observed:

"The widespread use of reserves targets in score cards affecting variable pay is seen to affect the objectivity of staff in some OUs when proposing reserves additions. Reserves coordination staff in E.PB-P have been alert to this and have successfully met the challenges with which they were faced. However, a shift in score card emphasis from reserves booking to successfully meeting project milestones is recommended."

It is also observed that, under certain circumstances, OUs can in effect be penalized for accelerating reserves bookings from one year into the preceding year. The penalty arises if the scorecard ranges for both years are left unchanged: the benefit to the OU in the year that the reserves are booked can be severely curtailed (particularly if the OU was already close to the range maximum), whilst at the same time a below target score for the following year is almost guaranteed. Under such circumstances there is little incentive for the OU to volunteer to book reserves earlier than planned. The situation can be remedied if the Scorecard ranges are reset, but this introduces an unwelcome precedent and can also promote a lack of objectivity. The situation could be exacerbated by the introduction of more central control of overall EP performance on reserves replacement, as proposed in (1b) above.

It is recommended to remove Proved Reserves Additions from the OU scorecards with effect from 2003. In its place, higher weighting should be applied to milestones that are related to project delivery and in particular to those that can have reserves additions associated with them (i.e. VAR3, VAR4, FID and, if appropriate, confirmation of improved recovery performance). A mechanism should be found by which accelerated delivery of milestones will lead to a net benefit to the OU concerned in recognition of its achievement.

Reserves Replacement Ratio should remain on the EP Global Scorecard, and possibly those of the RBDs. There should be clear definition and understanding of the target with respect to "organic" additions and changes made through Acquisition and Divestment activities. Removing this measure from OU scorecards might weaken the incentive of OUs to seek

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positive reserves revision, however this might as effectively be addressed in the long term by actions to promote awareness of the issue generally within the EP population.

Action: EPB to propose detailed plans for OU Scorecards as part of the ongoing review of the scorecard system. EPB-P, in consultation with the Hydrocarbon Maturation Leadership Team, to define and implement a long-term action plan for promoting awareness of issues relating to the disclosure of proved reserves.

(I have mixed feelings on this one - while I completely agree with Anton's observations about the influence of reserve scorecards on OU staff objectivity, I really like that the scorecards focus attention on reserve additions. This has long been a creative tension in SEPCo that we manage by clearly communicating the standards required for reserve additions (everyone knows the rules) together with an thorough, frequent and detailed audit of every major change to assure all know the rules will be enforced. This is hard to duplicate at the Group-wide level as scorecards are annual but audits are less frequent - allowing "room" for the aggressive, non-objective bookings to possibly sneak by.)

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2) Reserves Administration System

The system for administering year-end reserves reporting is tried and tested and no significant changes are considered to be necessary other than to include the processes described in (1) above. The documentation describing the system has not been updated since 1996 and in the meantime numerous workflow and organizational changes have occurred. EPB-P will update and reissue the documentation in due course.

It is stressed that, whilst Latest Estimates may be prepared as the year progresses and investment decisions may be taken that will have an effect on the year-end results, no (MAJOR) reserves changes can be considered "booked" until the annual submission, review, audit and approval cycle is completed. (this last statement, "no reserve changes can be considered booked until the annual... cycle is completed", could cause a significant amount of SEPCo capex activity to become expex. This is because SEPCo now will allow monthly (with quarterly validation) booking of proved reserves that are then immediately further developed by investment activity. For example, a well is drilled for a probable target, once logged and evaluated, proved reserves are documented and booked then completion costs can be capexed -- but only if the proved reserves have been booked before the completion costs are incurred (or at least if booked in the same month). If now booking is only annually, we would have to delay completions to the following year to be capexed. Another example is onshore tight formation drilling (Pinedale, Antrim) where we book proved reserves offsetting each new well thus allowing this neighboring location to be drilled with capex. Active drilling programs in Pinedale would use much more expex if these neighboring developments cannot be drilled for proved reserves except a year later. One possible solution is to set a limit on what sized changes require ExCom review and approval. It seems this document is focused on project-sized changes/additions rather than individual well sized changes. With a size limit on such ExCom annual approval required changes, the smaller items (most individual wells or completion zones) could still be booked as SEPCo now does.)

2a) Schedule of Authorities and Process Work Flow

The current schedule of authorities in relation to proved reserves disclosure is included as Appendix D. This summarizes the approval process commencing with the preparation of data within the OUs, compilation and review by EPB-P and the Group Reserves Auditor, through to final sign-off by EPB, EPF and the external auditors. It is considered that no changes to the schedule are required.

Appendix E details the flow of work and information in preparing proved reserves information for external disclosure, together with the revisions that would be necessary to implement the recommendations of section (1) above.

Action: EPB-P to reissue the finalized schedule of authorities and process documentation after approval by EPB and EPF, by the end of 2002.

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2b) Data Management

At present Shell has no consolidated database containing historical information of proved reserves and other resource categories. The information is available, but generally distributed between a variety of Excel files and utilities that only a few staff know how to navigate.

The current system of collecting information from the OUs via Excel spreadsheets works well, is understood by the OUs and offers great flexibility in evolving requirements from one year to the next. Consequently no changes to that system are proposed.

However, it is proposed to improve the systems for storing and retrieving historical data. It is currently envisaged that the existing information will be collected in a series of Oracle tables, updated annually, stored centrally and accessible to a wide selection of users by their method of choice (e.g. Business Objects or Microsoft Access).

Action: EPB-P to develop a prototype database in consultation with EPB data management experts, populated with all the data that is currently stored electronically by EPB-P, ready for migration to Oracle by the end of 2003.

3) Corporate Experience

Due to the relatively small number of individuals that have been working actively on the administration of reserves in the centre, and in particular on the development of Shell's Petroleum Resource Volume Guidelines, there is a relatively short and incomplete corporate memory on this matter. (comments on Shell corporate experience in general comments)

Action: EPB-P to create and maintain reference documentation (file note) of the development of Shell's reserves reporting guidelines over time. Version 1 by 31 December 2002.

4) Competitive Intelligence

Efforts will be redoubled to seek intelligence on the actual practice of competitors in disclosing proved reserves. This is likely to take the form of informal, off-the-record discussions by OU engineers and managers working on common projects with competitors. The current technical staff pool will be polled for recent experience, particularly where this has been gained by engineers working directly for competitors in recent years. The initial objective will be to understand the practices of competitors, before taking a view on whether there is a case for modifying Shell's interpretation of the SEC rules.

(This seems innocent enough and I know it is offered with the full intent of remaining within the legal limits of all regulatory requirements, but as it stands now it seems to suggest our process to improve performance is to find what others "get away with" and do it ourselves. I would certainly collect this data but my primary effort to "broaden" Shell's current interpretation would be based on appropriate methods of open dialogue with the SEC or those who can help clarify their rules (like external auditors or reserve determination consulting companies) while also working to increase industry (thus SEC) awareness of new

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technology or methods that fully support the reasonable certainty intent and actively participating in industry forums where reserve issues are discussed. This should be complemented by technical work specifically targeted to increase our proved reserves bookings (as a percent of expectation) based on tools or techniques that satisfy SEC intent/rules. An example here is the work done to define a standard allowing seismic in the booking of downdip proved reserves.

I expect that concept of "open discussion" (even done appropriately) with the SEC will cause concern but consider every other regulatory group we deal with - safety, environmental, operations - we actively engage in dialogue to assure a good working relationship and fully transparent compliance with the law. Then we can use this strong relationship to help direct gradual changes in policy or interpretations to appropriate win-wins matching legal intent with business practicality.

Action: EPB to develop a network of contacts, bearing in mind the sensitivities inherent to the issue. Target to include status reports in ExCom reviews (see 1b above) and to propose actions at other times as required.

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Appendix A

Appendix A: Reserves Opportunities Catalogue

Project	FID	PRA ¹	RRR ²	Note
Licence Extensions:				
Nigeria SPDC		530	35%	3
Oman PDO		500	35%	4
Malaysia		450	30%	
Abu Dhabi		370	25%	
Denmark		80	5%	5
Norway		70	5%	
Venezuela		40	3%	
Syria		10	1%	
Brunei		0	0%	6
T&OE				
"Quick wins"		150	10%	7
Big Tickets and Strategic Options				
Quota increase, Nigeria		0	0%	8
Retain Sakhalin consolidated and/or more aggressive booking		600	40%	9
Abu Dhabi Whale	2003	550	35%	A&D
Venezuela Cretaceous	2003	410	25%	
Kuwait OSA	2003	400	25%	organic? ¹⁰
Central Asia Cygnat	2003	220	15%	A&D, dead?
Russia Salym success case	2003	120	8%	organic?
Iran Azadegan farm-in	2003	110	7%	A&D
Russia Zapolyarnoye Neocomian	2004	760	50%	
Libya Gas (Block 6 devt.)	2004	440	30%	
Iran Bangestan	2004	300	20%	
Qatar SMDS	2004	300	20%	A&D
Venezuela LNG	2004	250	15%	
Saudi Arabia CV1	2004	70	5%	
Ranked out of the Base Plan 2002				
Nigeria SNEPCO Bonga SW	2003	70	5%	
China Changbei Upstream	2003	55	4%	
Australia Sunrise	2004	340	20%	
Norway Ormen Lange	2004	160	10%	

- ¹ Approximate Proved Reserves Additions, million boe, unrisksed.
- ² Approximate contribution to Proved Reserves Replacement Ratio in the year of reserves booking, assuming annual production of 1500 million boe total for EP, OA basis.
- ³ Any new reserves bookings will need to be justified with reference to production growth targets, see also (8) below. Figure from 1.1.2002 ARPR: recent RBA advice suggests figure could be 600 MMboe.
- ⁴ Based on the currently reported post-licence Expectation Reserves (550 million boe). Reserves to be booked when there is certainty that a deal will occur with no risk of detailed negotiations de-railing it.
- ⁵ Not under Shell control: negotiation to be conducted exclusively by Concessionaires (A.P. Moller).
- ⁶ Reserves already booked assuming that BSP's rights to two 15-year licence extensions will be exercised. Any reserves upside would be in relation to the negotiation of further extensions beyond the 30-year window, but this may be offset by potential equity reduction in the first two 15-year extensions.
- ⁷ A more detailed inventory will be developed.
- ⁸ A quota increase is necessary in any case to enable production to grow and thereby enable the currently booked Proved Reserves to be realized. No new within-licence reserves will be booked until clear evidence is available that the required higher production rate can be achieved and sustained.
- ⁹ Bookings should in principle keep pace with "reasonably certain" market development and preferably with actual LNG sales contract fixtures.
- ¹⁰ Cash-based Service Agreement with little or no exposure to oil price. Consequently it might not be possible to book reserves.

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Appendix B

Appendix B: Potential Reserves Exposure Catalogue

Asset (Year booked)	Reserves at risk MMboe	Comment (reason not to de-book)
Australia Gorgon (1997)	560	Booked in 1997 in anticipation of imminent FID, subsequently deferred indefinitely by the downturn in Asian economies and the consequent reduction in demand for LNG. It is inevitable that a resource of this magnitude will be developed eventually.
SNEPCO Bonga IFO (1998, 2000)	128	IFOs (In-Field Opportunities) largely consist of unpenetrated reservoirs that would not qualify for inclusion in the Proved Area for reserves under the recently clarified SEC rules. They are retained pending the completion of appraisal, largely as part of the ongoing development of other Bonga reservoirs. Appraisal to date has generally confirmed the presence of hydrocarbons in these reservoirs as expected.
SNEPCO Bonga Main (1998) SNEPCO Erha (1999) SNEPCO Abo (1997) Angola Block 18 (2000) Reserves potentially at risk estimated provisionally to be 75% of the current inventory.	up to 210 up to 125 up to 25 up to 55	Reserves rely on the successful implementation of water flood in reservoirs that have no, or at best tenuous, local supporting analogues. As such, the incremental recovery associated with water flood would not qualify for inclusion under the recently clarified SEC rules. However, given that the bookings have been made, they should be retained in the inventory pending acquisition of actual performance data. The Bonga Main booking was queried by the SEC (along with many others) in its routine review and challenge of the 31.12.1998 Form 20-F submission. Although the challenge was not pressed strongly by the SEC, it was not specifically disputed.
Norway Ormen Lange (1999, 2000)	109	Reserves have been partially booked ahead of VAR3 and FID, whilst it appears that there are issues that could prevent it proceeding. De-booking will be considered only when and if it becomes clear that development definitely will not proceed.
Netherlands, Waddenzee (?)	25	Government-enforced moratorium on Waddenzee drilling, due to environmental concerns, could ultimately prevent development from proceeding.
Brunei legacy (Various)	20	Historical reserves bookings that can no longer be supported are inventorized and actively managed, with a view to cushioning the impact of their de-booking. It is expected that the remaining balance will be reduced to zero over the next two or three years, in consultation with national regulatory authorities.
Total	840 - 1260	The total proved reserves balance at 1.1.2002 was 19100 MMboe.

In addition, reserves in some OUs would be at risk if planned production rate increases do not materialize. The OUs thus affected are SPDC Nigeria and Abu Dhabi. For illustration, if production were to remain constant year-on-year, instead of growing as planned, the reserves that would be placed at risk each year would be some 70 MMboe and 15 MMboe in each case. Furthermore, Oman PDO must sustain current production rates throughout the remaining lifetime of the licence to ensure production of the booked proved reserves.

The SEC provides no specific guidance on reserves disclosure for novel or "innovative" contract structures. Shell currently has four bookings in this category: the Venezuela service agreement, Iran buy-back contract, Oman Gisco and the booking of NGL reserves in connection with interests in Abu Dhabi GASCO.

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Appendix C

End-August 2002 Latest Estimate, Proved Reserves Additions

Million Boe	f1	Proved Reserves Additions			Reserves Replacement Ratio	
		Plan	LE	Delta	Plan %	LE %
Organic						
Kazakhstan	Kashagan Declaration of Commerciality + Arman		384	384		27.3
USA	Mare W/Asper/OleorOSO Marlin? Shymon, Crossbarred others	139	145	5	9.8	10.3
Brunel		67	68	0	4.7	4.7
Canada		50	50		3.6	3.6
Nigeria (SNEPCO)	Bonga SW challenge to reach VAR3 in 2002	116	49	-67	8.2	3.5
Angola	Block 18 FID T Raked pending check with SEC rules	33	45	12	2.3	3.2
UK	Corumb West/Catwin?, Shawwater/Commanit/MS4, Isoler deferred	69	36	-31	4.8	2.6
Venezuela		24	32	8	1.7	2.3
Netherlands	Net gain; Plan figure was inadvertently omitted from EP total		25	25		1.8
Syria		30	21	-9	2.1	1.5
Egypt		13	15	2	0.9	1.1
Gabon		11	11		0.8	0.8
Pakistan		7	7		0.5	0.5
Australia (SDA)	Bahdra-3 well result(f). Query Plan figure.	10	5	-5	0.7	0.4
Brunel (FCE)		0	4	4	0.0	0.3
Argentina		3	3		0.2	0.2
Germany	Changed / deferred drilling programme	3	3		0.2	0.2
Thailand	Reduction pending completion of studies Q3/Q4	17	2	-15	1.2	0.2
Australia (WPL)		4	1	-3	0.3	0.0
Russia	Decarbonation deferred	0	0		0.0	0.0
USA (Aes Comp)	Aes Included in USA LE		92	92	-8.5	
Bangladesh	Changed / reduced activity level	4		-4	0.3	
Brazil	BS-4 deferred	4		-4	0.3	
Oman (PDO)	Production forecast exposure / uncertainty	41		-41	2.9	
Namibia	Kudu appraisal	78		-78	5.4	
Norway		125		-125	8.8	
Oman (GISCO)	Virtual PSV / PSC effect	7	-3	-3	0.5	-0.2
Iran	PSV effect		-8	-15		-0.5
Malaysia	PSV effect		-23	-23		-1.7
New Zealand	PSV effect, Taps Papanu, Uuevitunui, Oas/BI Jumpet		-28	-28		-2.0
	Pohokura	31	-39	-70	2.2	-2.8
		4	-51	-54	0.3	-3.6
Total Organic Production	Includes ExCom adjustment	798	754	-42	56	54
		1419	1400	-18		
A&D	Adjust total RRR so far for effect of A&D production					-2.4
ENTERPRISE (KMOC@48%)	KMOC = 131 mln boe		1141	1141		77.7
Norway	Drugen		33	33		2.2
USA	Rocklea		27	27		1.8
TOPCO NZ			9	9		0.6
UK	Goldeneye		7	7		0.5
DR Congo (Zaire)			-17	-17		-1.2
New Zealand	Portfolio rationalization + transfer to TOPCO NZ		-49	-49		-3.3
Iran	Fern out		-51	-51		-3.5
Total A&D			1100	1100		72
Total Organic + A&D		798	1854	1056	56	126
Production Organic + A&D		1419	1470	50		
Strategic Options						
Whale		154		-154	10.8	
Namibia Gas (FLNG) Incremental		145		-145	10.2	
Libya gas		90		-90	6.3	
Venezuela light oil		86		-88	6.0	
AIOC notional		81		-81	5.7	
Libya Block 47		21		-21	1.5	
Stephenson		13		-13	0.9	
Albekumla notional		13		-13	0.9	
OU projects		-2		2	-0.1	
Total Strategic Options		601		-601	42	
Grand Total		1397	1854	457	98	126
Production Grand Total		1419	1470	50		

End-August 2002 Major Road Map Items

Million Boe		Proved Reserves Additions		Reserves Replacement Ratio %
		Plan	Delta	
Total LE Proved Reserves Additions		1854		126
Total LE Production		1478		
Downside:				
Enterprise	Corb, Tempe/Rossa, Skary Area debooking	-184		-12.5
SNEPCO	Bonga SW fails to pass VAR3	-49		-3.3
Upside:				
Enterprise	Shell guidelines implementation upside	50		3.4
Whale	Deal secured in 2002; 50% Shell share, unrisks	450		30.8
Other SOs		33		2.2
Range	Minimum			110
	Maximum			162

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Appendix D

Appendix D: Proved Reserves Schedule of Authorities

Based on EP 86-0725, updated 1996 and 2002.

Title of document	Responsible, Preparation	Responsible, Approval	Final submission for use to
1 Proved Reserves Replacement Target Setting	EPB-P, ExCom	ExCom	EPB-P
2 Reserves Audit Reports	GRA		EPB, RBD and OU
3 Resource Management and Reporting Guidelines			
a) Process, responsibilities, definitions, requirements	EPB-P, GRA	EPB	OU
b) Technical methodologies	EPB / EPT	EPT	OU
c) Matters relating to proved and proved developed reserves estimating procedures	GRA, EPB-P	EPB	SI-FOGB and OU
4 Annual reserves return from OU.	OU Technical, Finance	OUTM / FM	GRA, EPB-P
5 Audit trail in support of annual reserves return from OU.	OU Senior RE	OUPE Manager	OUTM
6 Standardized Measure Report			
- OU annual submission	OU Technical, Finance	OUTM / FM	EPB-P, GRA
- Group submission to SEC Form 20-F	EPB-P, GRA	EPB, EPF	SI-FOGB
7 Preliminary report on year-end proved reserves to ExCom	EPB-P	EPB	ExCom
8 Reserves Auditor Report	GRA		Various
9 Proved reserves "Letter of Comfort" to external Group Auditors.	GRA	EPB, EPF	Group Auditors
10 Report to EP ExCom on year-end proved reserves	GRA		ExCom via EPB
11 Statement of crude oil and natural gas reserves for inclusion in Annual Report submission to the US Securities and Exchange Commission (Form 20-F) and other Parent Company publicly disclosed reports.	EPB-P, GRA	EPB, EPF	SI-FOGB

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Appendix E

Appendix E: Schematic of Reporting Procedure: Proved Reserves

Part I: Prior to the end of the Reporting Year

Action party	Activity	Comments
ExCom December, previous year	Establish target Proved Reserves Additions and target range for the reporting year	
OUs, EPB-P Monthly	Maintain Latest Estimate of Proved Reserves Additions and SFR Maturation during the reporting year	Via EPMIS. Report to ExCom monthly.
EPB-P, GRA September, October	Update Petroleum Resource Volume Guidelines (reports EP yyyy-1100 and EP yyyy-1101)	Distributed to all OUs during the reporting year by EPB
EPB-P October	Distribute pre-populated Reserves Reporting Workbooks to OUs	
ExCom, EPB July, November	Review LE Opportunities Catalogue and Potential Exposure Catalogue. Specify actions required for year-end reporting	ExCom to review outlook for the reporting year and to direct bookings strategy (within the bounds of the SEC rules) with a view to managing the end result.
EPB-P to OUs via RBDs November	Advise OUs on ExCom decisions regarding the management of Proved Reserves bookings	Advise on major bookings to be accelerated or deferred and debookings to be made.
EPB-P, OUs December	Agree detailed procedures for managing float projects reserves bookings	

Continued on the following page

New activities that are proposed are shown in shaded boxes.

A detailed timetable is prepared annually by EPB-P in consultation prepared annually by EPB-P in consultation with SI-PXX (External Affairs), SI-FCG (Group Reporting) and SIEP-EPP.

GRA: Group Reserves Auditor

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Appendix E

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Appendix E

Part 2: After the end of the Reporting Year

Continued from the previous page

<p>OUs and RBDs January, weeks 1 & 2 (SEPCo <u>cannot provide data this early if CERES match required</u>)</p>	<p>Notification of reserves</p>	<p>Reserves Reporting Workbooks placed on EPB global server or e-mailed to EPB-P.</p>
<p>EPB-P, GRA January weeks 2 & 3</p>	<p>Clarify and challenge OU submissions as required</p>	<p>Verify that changes reported for the year can be supported.</p>
<p>EPB-P, OUs January week 3</p>	<p>OU submissions</p>	<p>Inclusion / exclusion of "float" bookings to manage year-end result</p>
<p>EPB-P January weeks 3 & 4</p>	<p>Provide summary data to external auditors for review</p>	
<p>EPB-P, GRA, FOGB January week 4</p>	<p>Agree final production data</p>	<p>Production reported in the Reserves Reporting Workbook must be consistent with Ceres reporting.</p>
<p>EPB-P, EPB January week 4</p>	<p>Preliminary report and presentation to ExCom</p>	<p>Note for Discussion plus presentation. Last opportunity for ExCom to influence the final result.</p>
<p>GRA, External Auditors End of January</p>	<p>Agree final proved reserves for external disclosure</p>	
<p>GRA, EPB-P End of January</p>	<p>Present final reserves to EPB, EPF</p>	<p>Declaration of satisfaction with the figures to be reported at year-end for proved and proved developed reserves. EPB & EPF sign "Letter of Comfort" to external auditors, sent via SI-FOGB</p>
<p>EPB-P, GRA End of January</p>	<p>Reserves Meeting</p>	<p>Report and Presentation of proved reserves information to external auditors and Group Contoller (FOGB).</p>
<p>KPMG End of January</p>	<p>Confirmation to PWC from KPMG</p>	<p>Letter to Group External Auditors.</p>
<p>EPB-P, EPB Early February</p>	<p>Final report to ExCom and CMD on year-end proved reserves</p>	<p>Note for Information plus presentation if required.</p>
<p>EPB-P Early February</p>	<p>Parent Company Annual Report</p>	<p>Reserves figures passed to SI-FOGB. Including copy of initialled schedules from External Auditors.</p>

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Appendix E

EPB-P, EPB
End of May

EP Reserves and Scope For
Recovery

Reference report describing changes in
Group Hydrocarbon Resources during
the reporting year.

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General Comments from Rod Sidle on "EP Proved Reserves Management" topics

The above referenced document appropriately recognizes the need to "manage" the critical EP business metric, Proved Reserves. However there are more dimensions to the alternatives for this management than are discussed. The processes noted focus on EPB-P and ExComm interactions, which are quite important, but do not consider that OU interests in and experience with managing proved reserves is also worth discussing. For example, consider the following:

- T&OE, specifically the Discipline Leads for Reservoir Engineering and the Hydrocarbon Maturation Forum, have a strong interest in proper reserves management and (based on comments at the 26 Sept Global RE DL Leadership Team Workshop) agreed to work (along with the Group HC Resource Coord.) on improvements to the reserve booking process.
- Certain OU's already have Proved Reserve Management practices that could be shared and potentially adapted in developing the Group practices. (Certainly SEPCo has reserve booking and management practices we would be very willing to share.)
- OU Reserve Focal Points have not recently (ever?) met to discuss reserve management issues – yet other business management groups do this annually, such as with CAF and Exploration Forum. Such sessions could include sharing Group-wide issues and local "best practices" to better define how an effective OU level management could be done. This then reduces (but not eliminates) the extent of the central management needed to achieve common goals. Clearly some elements of management are more effectively done locally while others require corporate level control. One topic to address would be to clarify the role of the OU Reserves Focal Point – this now ranges from a (largely) full-time Reserves Manager to a part-time Coordinator. Responsibilities start at the minimum of proper data capture and reporting for the ARPR (at year end) up to year round tracking, reporting and "encouragement" to staff for complete, accurate and timely reporting of proved reserve additions/changes. This more active case also involves consultation to provide both case-by-case guidance on booking issues as well as annual training on proved reserve (and other HC Resource Volume) definitions and booking rules.

Other thoughts:

- Control of "low quality" proved reserves often requires active enforcement of booking rules by a frequent (at least near year end) audit of reserve bookings before they are accepted. We are the only major EP company that I know that only audits on a 4+ year basis, and then looking backward (so the errors are already reported). Should there be local/regional auditors to supplement the GRA? (This could also provide capacity to audit other than SEC volumes, further improving the quality and consistency of Shell resource volumes.) It will be interesting to hear the comments that come from Anton's presentation at the Stavanger SPE ATW.

- Any staff interpretation that ExCom may unhappily view technically valid downward reserve revisions will only worsen the problem. Ample experience has shown these leads to significant initial underbooking so staff can avoid at all cost any possible later reductions. If the even unintended message that senior management will negatively react to negative reserve changes is conveyed, this will undermine the true intent of accurate reserves, accepting that both positive and negative changes will occur with the inherently uncertainty of reserve booking.
- Other options (as used by SEPCo in similar past situations) include accepting a large negative booking but recognizing the change in pieces over 2-3 years while further studies are being done.
- Currently technology development focused on needs for more proved reserve booking is limited (non-existent outside SEPCo?). Active consideration for technologies that both allow more proved and fully meet SEC standards are a good approach to help Shell differentiate themselves from others. (Example of success – SEPCo funded development of the technique that qualifies seismic to be used in defining the downdip water contact for the proved area determination.)
- While I agree additional documentation would be very valuable, we should also consider other ways to capture our knowledge. Our corporate experience with proved reserves determination is present but perhaps not all in the Centre. Likely this request for comment also went to Stuart Evans and Wim Swinkels. In SEPCo, we have Lyle Henderson, my predecessor as SEPCo Reserves Auditor. The point is simply we do have such corporate knowledge but we do not currently have a process to access this as needed (other than by email from the Resource Coordinator). If a better capture of this corporate knowledge is warranted, then perhaps an "ad hoc" reserves knowledge group should be formed to help assure this knowledge is accessed when needed. This would help me greatly as I sit on the SPE Reserves Committee and could use this group as a source and sounding board for new ideas of importance to Shell.

Thanks! – My comments above are intended to offer thoughts to consider – not as criticisms of our current practices. I am sure they are not a perfect, final answer, but I hope these thoughts (and those from others) along with continuing dialogue can lead us there.

The opportunity to share these thoughts is appreciated.....Rod