## How to raise the game: Key Strategic Actions

**Achieving The "Quiet Revolution" will require further actions**

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Performance</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Aspired portfolio and active upgrading</td>
<td>Project realisation to schedule &amp; within budget</td>
<td>Global People Standards, Processes &amp; Tools</td>
</tr>
<tr>
<td>Winning the Big Bets - through a global approach to NBD and M&amp;A</td>
<td>Technical &amp; Operational Excellence</td>
<td>Enhanced People Products</td>
</tr>
<tr>
<td>Bringing the Big Tickets onstream</td>
<td>RRR action</td>
<td>Competence Based progression Managed Open Resourcing</td>
</tr>
<tr>
<td>Realising Nigeria</td>
<td>Global Operating Model</td>
<td>Leadership Development</td>
</tr>
<tr>
<td>Innovative Technology &amp; Gas Solutions</td>
<td>Global Exploration</td>
<td>Aligned Global Leadership</td>
</tr>
</tbody>
</table>
The Quiet Revolution: Key Strategic Actions

SUCCESSFUL ACTIONS TO DATE

Portfolio

- Focussed acquisitions towards Aspired portfolio
  - Enterprise
  - Pinedale

Performance

- Exploration Strengthening
  - Success in Heartlands
  - GoM/ Malaysia
  - Strong global EXPEX management

People

- Operational Problems overcome (Brutus, Auger, Shearwater)
- Technical & Operational Excellence & Global Projects up and running
- Global Leadership meetings – EPLF, CEO/ExCom
- Global People Standards, Processes & Tools – on track for end 2002
- Competence Based progression Managed Open Resourcing Leadership Development – all on track for end 2002

Developing relations with key NOCs

Realising Nigeria through global support activity

High performing Ous (SEPCo, Malaysia, Expro)

Global Cost FRD prize quantified

Leadership in competitive technologies demonstrated eg. Monodiameter wells
**EP Globalisation**

**2003 & beyond**

**The New Operating Model**
- From autonomous self-sufficient OUs to 4-5 optimised regions
- Strong Global functional mandates and Governance
- Regional and local management and deployment of technical and business services
- Limited global services provision (R&D, EPP, etc.)

**1998-1999**

Global capital discipline enforced

**2000**

Global Capital & Exploration Expenditure setting
Global understanding of portfolio @ asset level
Strategic Cost Leadership embedded in organisation

**2002**

Launch of Global Technical & Operational Excellence
Launch of Global Major Projects team
Accountable Head of Global Exploration
Global Human Resources and Global M&A
Effective global New Business Development
New EP Operating Model

ExCom: global prioritisation, performance targets, strategy

Functions: strong global functional governance role, setting standards, best practices, monitoring implementation, skillpool management

Regions: Accountable for business planning and delivery of the plan, application of best practices etc.
New EP Operating Model

Corporate Centre

EP CEO

EPB

EPH

EPF

EPT

EP Global Services
Technology development and SDS, EP Projects, SGS, global well delivery, some business support....

= EP ExCom

---- = stronger mandate, including some global services

EPE

RNBD

RHD

RFD

RTD

EPW

RNBD

RHD

RFD

RTD

EPA

RNBD

RHD

RFD

RTD

EPM

RNBD

RHD

RFD

RTD

EPG

RNBD

RHD

RFD

RTD

Regional Organisation (x5)

Local Operations/ Asset Clusters

Vijver 1054
Aspirational targets by region/function

**Global C&P $84mn (logistics, ISC in Core Ops)**

**Europe Core Ops $59mn (incl. NESS)**
- CNS
- NNS
- NESS
- LAND
- OBO

**America Core Ops $13mn**
- Rockies
- GoM
- Venez.
- S.Cone
- Brazil
- Canada
- EP
- Oils
- Sands
- Aera

**Asia-Pacific Core Ops $22mn**
- China
- Sakhalin
- BSP
- SMEP
- Thai
- Phil.
- Aus/NZ
- OBO

**Middle East Core Ops $38mn**
- PDO
- Egypt
- Syria
- Middle East
- Caspian

**Africa Core Ops $8mn**
- SPDC
- SNEPCO
- Gabon
- Cameroon

**EP Global Services**
- Technology development and SDS, EP Projects, SGS, global well delivery, some business support....

**Corporate Centre**
- EP CEO
- IT: $12mn
- Other: $8mn
- $15mn $8mn $44mn

**Portfolio changes $45mn**
- EPB
- EPH
- EPF
- EPT

**EPE**
- IT: $13mn, Other: $12mn
- $7mn
- $8mn
- $8mn
- RHD
- RFD
- RTD

**EPW**
- IT: $9mn, Other: $3mn
- $4mn
- $5mn
- $5mn
- RHD
- RFD
- RTD

**EPA**
- IT: $3mn, Other: $1mn
- $3mn
- $3mn
- $5mn
- RHD
- RFD
- RTD

**EPM**
- IT: $7mn, Other: $6mn
- $5mn
- $6mn
- $5mn
- RHD
- RFD
- RTD

**EPG**
- IT: $4mn, Other: $1mn
- $3mn
- $3mn
- $3mn
- RHD
- RFD
- RTD

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Benefits & Risks

Benefits
- Strongly enforce standardised systems and processes
- Demonstrate T&OE in all aspects of EP business
- Economies of scale, de-duplication in provision of support
- Greater focus/alignment on Exploration and NBD
- Much reduced corporate centre, shorter lines of control, better information flow
- More effective, selective use of premium expatriate resource, ultimately reducing total expat numbers
- Attractive EVP for demographically changing EP workforce

Risks
- Potential for disruption of core business
- Managing external interfaces locally
- Concern amongst JV partners and governments on motives and bias towards optimising Shell interests
Asset swaps could generate synergies of $45-65m annual opex benefit

2002 Forecast UOC and Unit Margin ($/boe)

Portfolio Management should focus on high UOC AND low margin assets

Not shown
- Sakhalin
- Pakistan
- Bangladesh
- Iran
- Argentina
- Brazil
- New Zealand
- Philippines

VUJVER 1058
Investor Relations improvements

- Longer Term View of the Existing Metrics
- Changing the Emphasis to “value-based” or total resource based metrics.
- Communicate Shell EP strengths – tailored to stakeholder
- Know where you’re No 1 – simple, verifiable leadership
- Watch like a Hawk – competitors and what they say about Shell
- Deflect the Bad News – proactively manage damaging competitor comparisons
- The “External Face” of EP
The EP Dilemma: Caught in the box?

Normalised ROACE delivery

Radical Portfolio

ISSUES
- Impact of acquisitions
- Project capex overruns
- UK tax increase

Actions
- Continuous portfolio upgrade

Managing external impact

Evolution of Operating Model

Value

Production Growth

Reserves Replacement

Unit Cost Reduction

ISSUES
- Restatement of Enterprise
- Few NBD successes
- Severe mature field decline, absence of T&OE

PPP
- T&OE drive and T&OE Projects
- “New Exploration”
- Realise Nigeria
- Technology drive
- Focused NBD

ISSUES
- Early reserve bookings
- Licence expiry “constraints”
- MRH entries slow to materialise
- Lack of new exploration hubs

PPP
- Licence extensions
- NOC relationships
- Reserves Management

ISSUES
- Diminishing scope at OU level

ACTION
- Maximise internal synergy

Cost FRD
Delivering Shell EP –
The Quiet Revolution and beyond

EP Investment Case

Communications Strategy

Global People with a Global Mindset

Achieving Global Performance

Globalising EP - hardwiring the organisation

Costs FRD - Understanding further synergy potential

Portfolio Upgrade - culling the tail

Portfolio Renewal

Big Bets and Big Tickets (NBD and EPP)

Quiet Revolution

Chasing the Aspired Portfolio

Global Technology Implementation

T & OE: Reserves Actions

Global Exploration

Global AD

Global Planning / Capital Allocation

Mandated Operating Standards - SAP Blueprint

2002 / 2003 Roadmap
Summary

- External views show Shell will struggle to be the best...
- ...and internal data support the size of the challenge

- Rapid follow-through on Cost FRD including Evolving Operating Model
- Full implementation of PPP actions already underway
- Actions to improve the quality of the global portfolio
- Focused EP Investment Case to improve external impact
ROACE
(Existing Business vs. New Business)

* New Business: Canada (AOSP) only
ROSS
(Existing Business vs. New Business)

* New Business: Angola, Brazil, China, Athabasca Oil Sands, Enterprise Brazil, Enterprise USA, Enterprise Italy, Kazakhstan, SNEPCO, Sakhalin
Summary of First Look Plan

- Targets are not met by Current Plan

2003-7 Average ROACE @ $16/bbl

<table>
<thead>
<tr>
<th>16%</th>
<th>14%</th>
<th>12%</th>
<th>10%</th>
<th>8%</th>
<th>6%</th>
<th>4%</th>
<th>2%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Current</td>
<td></td>
<td></td>
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</table>

Annual change in unit cost from 2001 ($2.2/boe)

<table>
<thead>
<tr>
<th>4%</th>
<th>3%</th>
<th>2%</th>
<th>1%</th>
<th>0%</th>
<th>-1%</th>
<th>-2%</th>
<th>-3%</th>
<th>-4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Production in 2005 (Kboe/eq)

<table>
<thead>
<tr>
<th>5,200</th>
<th>5,000</th>
<th>4,800</th>
<th>4,600</th>
<th>4,400</th>
<th>4,200</th>
<th>4,000</th>
<th>3,800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Current</td>
<td></td>
<td></td>
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</tbody>
</table>

2003-7 Average RRR

<table>
<thead>
<tr>
<th>120%</th>
<th>100%</th>
<th>80%</th>
<th>60%</th>
<th>40%</th>
<th>20%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>Current</td>
<td>organic</td>
<td></td>
<td></td>
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</tbody>
</table>

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## Likely Impacts

<table>
<thead>
<tr>
<th>Remedial Action</th>
<th>Unit Cost Reduction</th>
<th>ROACE delivery</th>
<th>Production Growth</th>
<th>Reserves Replacement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut opex, expex, capex</td>
<td>▲</td>
<td>▲</td>
<td>▼</td>
<td>▼</td>
<td>Probably</td>
</tr>
<tr>
<td>Portfolio Upgrade</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td></td>
</tr>
<tr>
<td>Implement Cost FRD</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td></td>
</tr>
<tr>
<td>Acquisitions</td>
<td>▼</td>
<td>▼</td>
<td>▲</td>
<td>▲</td>
<td>Probably</td>
</tr>
</tbody>
</table>
...with delivery phased over the planning period

Phased Benefit by Opportunity Area ($mln)

Note: IT as an enabler and Expat benefits are embedded in Support, Tech Services, Core Ops and the Centre

VJVER 1069
Value vs Production in 2006

80% value and production capture from only 12-13 OUs

Final 10% from 15 OUs

Next 10% value and production capture from 4-8 OUs
What will Change for EPT

- Creates a Single Excom point responsible for technical capabilities and for achieving the technical development programme of Shell EP in partnership with CEOs

- Puts the focus and responsibility of the Global Technical Director clearly on achieving reserves and production development for Shell EP


- Provides a coherent management structure for R&D, T&OE, Global Technical Services, the technical challenges and capabilities in the regions and operating companies

- Provides a mechanism to tune staff numbers and skills and their distribution over Global, Regional and Local Organisations (...in line with workloads, project challenges, mandates, staff mobility and cost targets)

- Give staff more clarity over technical challenges, job profiles, career options, and mobility demands (...differentiation in EVP)
Technical Staff (Initial) Deployment

~6000 technical staff (excluding IT) ranging from seismic interpreters to project managers for delivery of production facilities.

Staff currently employed and deployed in OUs. Regional services/sharing to be accomplished through regional rationalisation.

NB: current EP IT staff count is ~1800, but globalisation of services and restructuring of the organisation will reduce and transfer staff (e.g. to Shell IT International for Group-level services) out of Shell EP. An EP IT staff level of ~600 may ultimately arise.
## Technical Staff Deployment

<table>
<thead>
<tr>
<th></th>
<th>Regionally Employed Staff</th>
<th>Locally Employed Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work scope</strong></td>
<td>Can work on any field and asset challenge operated by Shell EP</td>
<td>Can work on any field and asset within Region</td>
</tr>
<tr>
<td><strong>Work location</strong></td>
<td>Main Centres are Rijswijk and Houston, but staff can also be based (long and short term) in regional or country Centres</td>
<td>Main Centres are those in countries with Shell EP business, in some regions a regional Centre may be chosen or opened</td>
</tr>
</tbody>
</table>
Global Processes and Standards

T&OE will introduce Minimum Standards and common best processes that are critical for global performance and operational integrity:

- Exploration (Mandatory Processes and Practices)
- Reservoir Management (Integrated Field Reviews, Reservoir Surveillance Plans)
- Field Development Planning (Auditable FDP Process)
- Resource Maturation (5 Year Maturation Plans)
- Reservoir Modeling (Integrated Modeling Workflow)
- Production Forecasting (robust forecasting process)
- Production Optimisation (Optimisation process in place)
- Maintenance Management (robust system in place, compliance managed)
- Integrity Management (Auditble system in place, compliance mandatory)
- Engineering Standards (Update and align)
- Drilling and Completions standards (this will be expanded)
- Staff Development Planning (Plans all staff linked to EP competence framework)
- Competence Based Progression and Competence Assurance Process
Implementation Plan - Summary

- High-level organisation agreed by end 2002
- High-level organisation resourced by end Q1 2003 ("go live" date)
- New operating model effective end 2003.
- Global businesses should be in place by mid 2003.
- Overall Opex reduction programme targeting $500mln run rate end 2005
- Resource loading between now and end 2002 is primarily central (exception being work in EP Europe)
- The proposal for the first 4 months is as follows (and the estimated cost will be ca $ 2 mln):

ExCom Consideration – ExCom Meeting 12/09/02

- Programme Leader
  drawn from the CEO community; someone with vision, credibility, drive and energy for the change

- Programme Office 5 people
  high CEP, SG 2 – B, mix of experience and energy, split 50/50
  OU and Centre, plus 2 – 3 consultants

Function/Business Director Consideration

- Functional Teams
  ca. 5 per function (EPF/HR)* & ca. 10 (EPT) SG 2-B, high CEP, some ex. OU
- Global Business Teams
  ca. 5 per business (EPX/B)
  SG 2-B, high CEP incl. from OU
* A number of these positions are already effectively resourced (e.g. EP-HR Regional Advisors, EPF SAP and BBB implementation teams)

Regional Director Consideration

- Regions
  only EP Europe until end year – already resourced

- There would be an expectation of significant ExCom involvement – ca. ½ day per week.
- Additional discrete projects can be executed outside the changes to the operating model. It is assumed that respective directors will resource these projects directly.
Potential EP Europe Organisation

- Regional Exploitation
- Regional Development
- EPX
- NBD
- OBO
- Land
- NESS
- NNS
- CCO
- Small EP
- EP
- EPM
- EPA
- EPM
- EPI
- EPI
- EPI
- RTD
- RTD
- RHD
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Portfolio - EP assets have a wide range of unit operating cost.

UOC vs. Production - 2002 Plan

Forecast growth areas

High margin in 02 & 06

Specials

High Margins > $3.5 boe at mid PSY

Production (mmtb/yr)

UOC (QA & GA basis $/boe)

Source: Volume 2 (2001)

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V00231077
NOTE FOR DISCUSSION

Subject: EP PROVED RESERVES MANAGEMENT

Date: 3rd October 2002

FROM: EPB

TO: ExCom

Excom,

The attached note regarding reserves sets out some changes in process in an attempt to keep us abreast and better 'manage' reserves booking. I support the changes as I think they are not overly bureaucratic and can be helpful in all of us understanding and working the reserves issue with more clarity.

If you're rushed, the first two pages tell the story. Then the full story follows, and finally the appendices show the numbers and other details.

I'll appreciate your feedback.

Lorin
Note For Discussion

EP PROVED RESERVES MANAGEMENT

Over the last ten years, Shell has moved from bottom, to top (1996 - 1998) and back to bottom on proved reserves replacement performance compared with major competitors. Without significant new business being secured, licence extensions or major new discoveries, it is unlikely that proved reserves replacement will exceed some 70% on average during the plan period.

This being the case, the system that is used to manage proved reserves additions would benefit from revision with a view to:

a) Where possible and within the latitude of the SEC rules, avoid major swings in performance - in particular “peaks” in one year that exacerbate troughs in the next,

b) Maintain focus on new opportunities and actions required to mature them.

The overall changes to the process are summarized in the diagram below and on the following page.

<table>
<thead>
<tr>
<th>Current</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU Latest Estimates</td>
<td>OU Latest Estimates</td>
</tr>
<tr>
<td>No formal process in place to manage end-result</td>
<td>ExCom Review</td>
</tr>
<tr>
<td></td>
<td>Clear direction on target end-year result</td>
</tr>
<tr>
<td></td>
<td>“Float” items to manage end-result</td>
</tr>
<tr>
<td></td>
<td>OU engagement on which additions to make and which to carry forward.</td>
</tr>
<tr>
<td></td>
<td>OU engagement with respect to de-bookings</td>
</tr>
<tr>
<td>Reporting Year</td>
<td></td>
</tr>
<tr>
<td>January, following the reporting year</td>
<td>OU reserves report</td>
</tr>
<tr>
<td></td>
<td>Iterative process, using float to manage results</td>
</tr>
<tr>
<td></td>
<td>ExCom Review and final adjustments</td>
</tr>
<tr>
<td></td>
<td>Final Proved Reserves Report</td>
</tr>
</tbody>
</table>

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Summary of Proposal

Please refer to the relevant section on the following pages for detail and note also that several items referred to below will require coordinated action by the OUs, RBDs, T&OE and the Hydrocarbon Maturation Leadership Team, making use of the Hydrocarbon Maturation Forum.

1) Proved Reserves Replacement Management
   
   1a) Major Reserves Changes
       Close tracking of both planned and unplanned changes by the EPB-P
       Hydrocarbon Resource Coordinator in consultation with the OU Reserves
       Focal Points will be reinforced.
   
   1b) ExCom Review
       Two formal ExCom reviews will be introduced in July and November of the
       reporting year, augmenting the final review in January of the following year.
       ExCom will be briefed on the outlook for the year and presented with
       opportunities and potential exposures for further consideration and action
       (where necessary) via the RBDs and new business development teams.

   1c) Latest Estimate
       Monthly tracking of progress against plan, plus uncertainties, will be improved
       to provide more project-focused transparency.

   1d) Reserves Opportunities Catalogue
       An inventory of opportunities that are not in the plan for the current year will
       be maintained with the aim of identifying actions to address shortfall against
       target and ensuring appropriate focus on mid- to long-term opportunities.

   1e) Potential Reserves Exposure Catalogue
       An inventory of potential exposure (reserves at risk of debooking) will be
       reviewed at least annually at ExCom with actions being agreed.

   1f) Scorecards
       Within the Group there are mixed opinions on the inclusion of Proved Reserves
       Additions on OU scorecards. On the one hand it is seen to affect objectivity in
       reporting, on the other it is seen as a key means by which appropriate focus is
       maintained on this important business performance parameter. It is proposed
       to retain the item on OU scorecards for 2003 but to review the situation again in
       light of experience at the 2002 year-end reserves report.

   1g) Standardisation of Proved Reserves Estimating Methods
       Specific actions will be developed to further harmonize the approach to reserves
       reporting by the OUs and to improve benchmarking of reservoir performance
       across the Group.

2) Reserves Administration System: Schedule of Authorities
   Authorities in the process leading to proved reserves disclosure to the SEC have
   been updated, although no new authority levels have been added pursuant to (1)
   above (none are deemed necessary).

3) Competitive Intelligence
   Efforts will be redoubled to establish more fact concerning the actual practices
   of competitors, with a view to identifying issues that need to be resolved by the
   industry as a whole.

4) Capability Management
   Several areas have been highlighted for further consideration and development
   by the technical community in Shell.

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1) Proved Reserves Replacement Management

Recent years have witnessed dramatic swings in Shell's performance on proved reserves replacement, with results in 1996 - 1998 being the highest of our main competitors but performance since then being the lowest. The period of high performance was partly the result of renewed focus on proved reserves replacement following poor performance in the early 1990s and partly due to the acceleration of revisions into the year 1998 after revised Shell internal guidelines were introduced.

Fluctuations of this magnitude can undermine investor confidence. Within the bounds set by the SEC rules, it would be prudent to level them out so as to create a more stable and predictable environment that is in keeping with the sustained performance potential of the portfolio. By strengthening the management of this aspect of business performance, improved focus will be created on options and actions required to generally increase performance going forward.

The system for managing additions to the EP proved reserves inventory was last updated in 2000 with the introduction of performance tracking 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 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 as follows:

1a) Major Reserves Changes

The roles of the Hydrocarbon Resource Coordinator and the OU Reserves Focal Points should be reinforced to ensure that major changes to proved reserves (e.g. >30 million boe) are adequately worked prior to the end of the year in which they are reported. The objective is to allow time for clarification and discussion of the changes and to ensure that they are being treated correctly and consistently. The views of the Group Reserves Auditor will be sought where necessary, as will those of OU and EP management.

Thanks to the efforts of previous Hydrocarbon Resource Coordinators, it is already automatic practice in many OUs to seek the views of the Coordinator on reserves changes that are being contemplated, with supporting documentation being either volunteered or provided on request. This practice is to be further encouraged through personal communication and including in the Petroleum Resource Volume Guidelines a statement such as: "First-time proved reserves bookings for major new projects, or any other substantial change to proved reserves estimates exceeding 30 million boe, 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 Group Reserves Auditor."

An alternative approach was considered which would introduce a formal pro forma notification of major reserves changes to the Hydrocarbon Resource Coordinator for discussion with the OU, Reserves Auditor and Regional Business Advisers as appropriate and culminating in ExCom sanction, or otherwise. This was rejected on the grounds that it

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might not be possible to enforce and that it would not substantially improve on the current system (with the reinforcement proposed). OU feedback suggests that the additional bureaucracy would be unwelcome and could be counter-productive.

Action: EPB-P Hydrocarbon Resource Coordinator 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), 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.

 Allied to this, clear direction will be required on the minimum and maximum levels of reserves replacement that are to be targeted. In general, clear justification would be required for “accepting” performance below 100% reserves replacement in any given year. However, since the existing portfolio cannot sustain this level of performance going forward (based on knowledge and plans as currently defined), minimum targets must be set that fully take into account the “organic” growth potential of the portfolio. This will help to add clarity to the requirements for delivering new business to the portfolio. 140% annual reserves replacement is widely accepted to be consistent with Shell’s current 3% a.a.1 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, unless there are clear indications that the portfolio is capable of sustaining a higher level of performance.

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 (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)
- Views and Comments of the Group Reserves Auditor
- 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.

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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. The EPB-P Hydrocarbon Resource Coordinator will direct OUs to include or exclude these from their final submissions as required.
- Review of Group Reserves Auditor views and comments on the foregoing.
- Agreed actions required of OUs and EPB and EPF in preparation for the year-end reporting of reserves data.

In implementing this additional level of “steer” of the year-end result, the following must be borne in mind:

(i) It is important at all times to stay within the interpretative margin of the SEC rules. As at present, post-FID reserves must be disclosed in full unless circumstances dictate that caution should be applied (e.g. lack of firmness on gas sales contracts). Similarly, as at present, reserves that are not yet technically of commercially mature cannot be disclosed. Consequently, the “float” will consist mainly of the limited number of projects that are between VAR3 and VAR4 / FID, since it is for these that latitude in the interpretation of the SEC rules exists. Shell historical practice has been to consider booking reserves as soon as a project is deemed to be mature (currently interpreted as having passed VAR3). The 2001 SEC clarification of its rules implies that booking at FID would be preferred, and this seems to be the practice adopted at least by BP and possibly other major competitors. As part of the revised management system, it is recommended that greater alignment between investment decisions and reserves impact be sought, implying that in general the Centre should encourage OUs to move reserves bookings towards FID.

(ii) Some OUs will inevitably have problems in accommodating requests from the Centre to include certain potential bookings in the “float” inventory. The problem will be most pronounced for joint ventures such as BSP and NAM, in which other shareholders approve the proposed reserves bookins in advance of year-end reporting, and in other cases such as SPDC and FDO in with the regulatory authorities pay particular attention to the year-end reserves situation. The timing of discussions between these OUs and their other stakeholders varies, but is generally in late November / early December. Consequently, the November ExCom review must take place in early November to allow for maximum alignment of Shell representation with ExCom requirements.

Action: EPB-P Hydrocarbon Resource Coordinator 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.
1c) Latest Estimate

The EPB-P Hydrocarbon Resource Coordinator 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 against plan on major reserves additions. In principle it also provides some opportunity for EP management to “steer” performance for the year and as such the proposals described in section (1b) above should be seen as augmenting, rather than replacing, current practice.

A system 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 uncertainties will become decreasingly significant. The current 2002 Latest Estimate and major remaining uncertainties are summarized in Appendix C.

Action: 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 focused on overall OU figures.

1d) Reserves Opportunities Catalogue

The EPB-P Hydrocarbon Resource Coordinator 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 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.

In its fully developed form, it is expected that the inventory will include all opportunities, whether they form part of the plan or not, and therefore there will be some overlap with the Latest Estimate. The Reserves Opportunities Catalogue will go further, however, by including strategic options and other big-ticket items that might be accelerated or otherwise secured through additional concerted effort.

It is acknowledged that time might not permit opportunities that are not already part of the plan to be matured in time to make a difference to the reporting year or the plan year. Nevertheless, rigour in capturing and summarizing the full inventory of opportunities can only serve to improve the quality of management information. This will help to ensure that decisions are taken and resources deployed in full knowledge of the alternatives that are available and with realistic expectations for the outcome.

Action: EPB-P (HRC) 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.

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1e) Potential Reserves Exposure Catalogue

The EPB-P Hydrocarbon Resource Coordinator 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).

The catalogue will be maintained in close consultation with the Group 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).

In the event that a debooking is deemed necessary or unavoidable, consideration should be given to the manner in which this will be achieved. In general, the revision should be made in full and with immediate effect. However, bearing in mind the disproportionate impact that this could have on investor confidence (in more severe cases), consideration may be given to phasing the revision over a period of years so as to weaken its impact and provide for attenuation of any performance swings that might arise should the corresponding project be resurrected.

Action: EPB-P (HRC) 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.
1) 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 EPB-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."

The Society of Petroleum Engineers (SPE) has issued statements on such practices that it feels may be in conflict with objectivity in reserves estimation (ref. "Standards Pertaining to Estimating and Auditing of Oil and Gas Reserve Information", June 2001).

It is also observed that, under certain circumstances with the current system, OUs can in effect be penalized for accelerating reserves bookings from one year into the preceding year.

These observations prompted serious consideration of a proposal to remove Proved Reserves Additions from the OU scorecards with effect from 2003. In its place, higher weighting would 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).

However, strong recommendations to the contrary have come from several of the more mature OUs, who find that keeping Proved Reserves Additions on OU scorecards ensures that this important aspect of business performance receives and retains an appropriate level of attention. The onus is on the Centre and OU technical management to ensure that the system is not abused and that it is used as a stimulus for genuinely constructive behaviours. This would be augmented by a concerted long-term effort to increase the level of awareness of the importance of the issue within the technical community and the responsibilities that estimators have in relation to the SEC rules (see also section 4 below).

Consequently, it is recommended to retain the measure on OU Scorecards at least for 2003. This must be coupled with the development of a mechanism to ensure that OUs are not penalized for maturing genuine proved reserves earlier than planned (in fact they should receive a net reward for their achievement) or for moving reserves bookings relative to plan as part of the process proposed in section 1b above. If unreasonable attempted bookings continue to distract EPB-P coordination staff from the overseeing of genuine bookings, the situation may need to be reviewed and the recommendation changed.

Under all circumstances, 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.

Action: OU Scorecards should retain Proved Reserves Additions targets for 2003. RBDs should ensure that fit-for-purpose mechanisms are introduced to encourage behaviours that are generally helpful to EP objectives in this regard and discourage inappropriate behaviours or attempted reserves bookings.

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1g) Standardisation of Proved Reserves Estimation Methods

The Shell Group Petroleum Resource Volume Guidelines are designed to promote consistency across the Group on the estimation of resource volumes in general and of proved reserves in particular. They are certainly helpful in so doing, yet evidence from Reserves Audits and superficial comparison of practices continues to suggest that the OUs are not yet as consistent in their approaches as one might expect.

The EPB-P Hydrocarbon Resource Coordinator, in close consultation with the Group Reserves Auditor, OU Reserves Focal Points and the Hydrocarbon Maturation Leadership Team, will investigate further development of the existing diagnostic tools that are routinely used to check the consistency of reserves reported across the Group. The continued emphasis that will be so created – particularly in the years between formal OU Reserves Audits – will help to ensure that every opportunity is taken to close the proved:expectation reserves gap for mature assets (in line with Group guidelines), as well as allowing improved comparison between OU submissions.

This is closely linked to Opportunity Identification: refer to section 4 below.

Action: EPB and T&OE to consolidate and further develop diagnostic tools for checking the consistency of OU reserves reports with each other and with the Group guidelines and to assist in identifying “outlying” field and reservoir performance for closer scrutiny. Where necessary, the guidelines may be further revised to remove any remaining ambiguity or to suggest specific techniques that might be considered for application. In certain circumstances, OUs may be requested to supply additional information as part of the year-end reporting process (e.g. rate – cumulative curves, historical and forecast, for major assets).
2) Reserves Administration: Schedule of Authorities

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 section (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 (Hydrocarbon Resource Coordinator) 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 reserves changes can be considered finally "booked" until the annual submission, review, audit and approval cycle is completed. Under some circumstances local approval of minor major reserves additions is required during the year to ensure that ongoing development expenditure is correctly categorized (i.e. as Capex rather than Expex). This practice should continue under local authority levels, being subject to periodic review by the Group Reserves Auditor.

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 the Hydrocarbon Resource Coordinator 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.
3) Competitive Intelligence

There is a significant amount of discussion within the Group on the practices of Shell compared with those of competitors. This focuses on (a) the way in which reserves bookings are managed and (b) the interpretation of the SEC rules and regulations.

The approach to managing reserves additions is known to vary considerably among competitors¹ and insight into alternative approaches might suggest further improvements to the Shell approach.

Interpretations of the rules do differ, particularly in areas that are not explicitly covered by the SEC regulations. Examples include:

- Calculation of entitlement under PSCs (practices seem to vary considerably).
- Treatment of entitlement under “innovative” contracts.
- The use of techniques that fully support the “reasonable certainty” intent of the SEC rules but on which there is currently no clear direction from the SEC as to the acceptability of such techniques.

To help sort myth from fact, efforts will be redoubled to gain intelligence on the actual practice of competitors. This is likely to concentrate on comparison (where possible) of bookings in joint ventures, or projects in which major competitors have an interest, and on industry networks and fora in which reserves and reserves management issues are discussed. The current technical staff pool will be polled for recent experience, particularly where this has been gained through working directly for competitors.

The initial objective will be to understand the practices of competitors and so to allow objective assessment of the degree to which Shell’s practice differs from that commonly adopted in the industry. Further action to modify the Shell management system can then be considered on an informed basis.

Exposure of significant differences in interpretation of rules will help to inform our views on the apparent performance of competitors. In some (expected to be rare) cases it may prompt a reinterpretation of the SEC rules by Shell, but more likely it will help to focus attention on matters that need resolution across the industry as a whole.

It is recommended that cases of doubt be resolved by open dialogue with the SEC and active participation in industry fora where reserves issues are discussed.

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.

¹ For example, ExxonMobil is believed to use an elaborate reserves booking management system supported by a 13-strong internal organization that audits reserves worldwide. Other companies make use of independent reserves auditors and, with the SEC coming under increasing pressure to ensure that regulations are being adhered to, it cannot be ruled out that companies will be required to make more widespread use of independent assessors.

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4) Capability Management

With the advent of T&OE, an opportunity is presented to address reserves reporting issues and in particular inconsistency of approach between the OUs. The following areas should be addressed by the technical reporting community, with the assistance of the Discipline Leads for Reservoir Engineering, the Hydrocarbon Maturation Forum (HMF) and Hydrocarbon Maturation Leadership Team (HMLT):

Commercial Awareness. There are examples of OU staff being unaware of the impact of reserves on external (investor) perceptions, the impact of reserves on NIAT (via depreciation), and of the net effect on investor confidence. It is not uncommon to hear the annual reserves exercise described as a "book-keeping exercise".

Technical Capability. In addition to engineering technique, a common understanding is required of the rules applicable to reserves reporting, the pros and cons of techniques that can be used in reserves estimating and of matters on which opinions differ across the industry (e.g. probabilistic aggregation). This will help both to promote convergence towards a "Group Common Approach" (to be documented in the Shell guidelines) and to identify issues to be addressed by the industry at large.

Training. All aspects of technical and "commercial" training should be reviewed to ensure that development engineers are given an appropriate balance of technical and commercial understanding.

Opportunity Identification. The recent concerted effort by the T&OE team to compile data on the technical performance of the existing field and reservoir inventory has yielded an invaluable resource for benchmarking and for diagnostic analysis of the portfolio. Refer also to section 1g above.

Best Practice. Several OUs have evolved proved reserves management practices that could be shared and potentially adapted in developing overall Group practices.

Reserves Reporting Community. Each OU has its own Reserves Focal Point that, depending on the size and complexity of the OU, may be dedicated full-time or only part-time to hydrocarbon maturation issues. It would be beneficial to the efficiency of this network in working towards Group common practices if occasional workshops could be held. As well as providing for enhanced networking and group cohesion, such events would be ideal for sharing Group common practices and local best practices, so helping to define best practice at the OU management level.

Technology Development. Currently there is only limited reserves estimating technology available within the Group that is focussed specifically at underpinning proved reserves. Active consideration of techniques that both allow more proved reserves to be booked and fully meet the SEC rules (or their intent) would help Shell to differentiate itself from the competition. An example of current success would be the SEPCo-sponsored development of seismic-based techniques for defining down-dip water contacts for the Proved Area determination.
## Appendix A: Reserves Opportunities Catalogue

<table>
<thead>
<tr>
<th>Project</th>
<th>FID</th>
<th>PRA(^1)</th>
<th>RRR(^2)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licence Extensions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria SPDC (mostly expiring in 2019)</td>
<td>530</td>
<td>35%</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Oman PDO (2012)</td>
<td>500</td>
<td>35%</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Malaysia (various years)</td>
<td>450</td>
<td>30%</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Abu Dhabi (2014)</td>
<td>370</td>
<td>25%</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Denmark (2012)</td>
<td>80</td>
<td>5%</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Norway (various years)</td>
<td>70</td>
<td>5%</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Venezuela (2013)</td>
<td>40</td>
<td>5%</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Syria (2009 – 2014)</td>
<td>100</td>
<td>5%</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Brunei (2003)</td>
<td>0</td>
<td>5%</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>T&amp;OE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio in definition</td>
<td>150</td>
<td>10%</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Big Tickets and Strategic Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quota increase, Nigeria</td>
<td>0</td>
<td>0%</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Retain Sakhalin consolidated and/or more aggressive booking</td>
<td>650</td>
<td>40%</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Abu Dhabi Whale</td>
<td>2003</td>
<td>550</td>
<td>35%</td>
<td>A&amp;D</td>
</tr>
<tr>
<td>Venezuela Cretaceous</td>
<td>2003</td>
<td>410</td>
<td>25%</td>
<td>15</td>
</tr>
<tr>
<td>Kuwait OSA</td>
<td>2003</td>
<td>400</td>
<td>25%</td>
<td>organic⁹⁰</td>
</tr>
<tr>
<td>Russia Salyms success case</td>
<td>2003</td>
<td>120</td>
<td>8%</td>
<td>organic⁹¹</td>
</tr>
<tr>
<td>Iran Azerdjan farm-in</td>
<td>2003</td>
<td>110</td>
<td>7%</td>
<td>A&amp;D</td>
</tr>
<tr>
<td>Russia Zapolya river Noncoman</td>
<td>2004</td>
<td>760</td>
<td>50%</td>
<td>16</td>
</tr>
<tr>
<td>Libya Gis (Block 6 dev.)</td>
<td>2004</td>
<td>440</td>
<td>30%</td>
<td>17</td>
</tr>
<tr>
<td>Iran Bajestan</td>
<td>2004</td>
<td>300</td>
<td>20%</td>
<td>18</td>
</tr>
<tr>
<td>Qatar SMD</td>
<td>2004</td>
<td>300</td>
<td>20%</td>
<td>19</td>
</tr>
<tr>
<td>Venezuela LNG</td>
<td>2004</td>
<td>250</td>
<td>15%</td>
<td>A&amp;D</td>
</tr>
<tr>
<td>Saudi Arabia CV1</td>
<td>2004</td>
<td>70</td>
<td>5%</td>
<td>20</td>
</tr>
<tr>
<td>Ranked out of the Base Plan 2002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria SNEPCO Bonga SW</td>
<td>2003</td>
<td>70</td>
<td>5%</td>
<td>21</td>
</tr>
<tr>
<td>China Changbei Upstream</td>
<td>2003</td>
<td>55</td>
<td>5%</td>
<td>22</td>
</tr>
<tr>
<td>Australia Sunrise</td>
<td>2004</td>
<td>340</td>
<td>20%</td>
<td>23</td>
</tr>
<tr>
<td>Norway Ormen Lange</td>
<td>2004</td>
<td>160</td>
<td>10%</td>
<td>24</td>
</tr>
</tbody>
</table>

\(^1\) Approximate Proved Reserves Additions, million boe, unrisked.

\(^2\) 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.

\(^7\) Notional "Quick Wins": 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.
## Appendix B: Potential Reserves Exposure Catalogue

<table>
<thead>
<tr>
<th>Asset (Year booked)</th>
<th>Reserves at risk MMboe</th>
<th>Comment (reason not to de-book)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia Gorgon (1997)</td>
<td>560</td>
<td>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.</td>
</tr>
<tr>
<td>SNEPCO Bonga IFO (1998, 2000)</td>
<td>128</td>
<td>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. A recent SEC Reserves Audit recommended that remaining unpenetrated reservoirs should be de-booked.</td>
</tr>
<tr>
<td>SNEPCO Bonga Main (1998)</td>
<td>up to 210</td>
<td>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.</td>
</tr>
<tr>
<td>SNEPCO Erha (1999)</td>
<td>up to 125</td>
<td></td>
</tr>
<tr>
<td>SNEPCO Abo (1997)</td>
<td>up to 25</td>
<td></td>
</tr>
<tr>
<td>Angola Block 18 (2000)</td>
<td>up to 55</td>
<td></td>
</tr>
<tr>
<td>Reserves potentially at risk estimated provisionally to be 75% of the current inventory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway Ormen Lange (1999, 2000)</td>
<td>109</td>
<td>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.</td>
</tr>
<tr>
<td>Netherlands, Waddensea (?)</td>
<td>25</td>
<td>Government-enforced moratorium on Waddensea drilling, due to environmental concerns, could ultimately prevent development from proceeding.</td>
</tr>
<tr>
<td>Bintuni legacy (Various)</td>
<td>20</td>
<td>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.</td>
</tr>
<tr>
<td>Total</td>
<td>840 - 1260</td>
<td>The total proved reserves balance at 1.1.2002 was 19100 MMboe.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Million Bar</th>
<th>Proved Reserve Additions</th>
<th>Reserves Replacement Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plan</td>
<td>LE</td>
</tr>
<tr>
<td>Organic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>USA</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>Russia</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>Norway</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>France (WEU)</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>Total Organic</td>
<td>796</td>
<td>754</td>
</tr>
</tbody>
</table>

### A&D

<table>
<thead>
<tr>
<th>Company</th>
<th>Total</th>
<th>LE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENI</td>
<td>1141</td>
<td>1141</td>
</tr>
<tr>
<td>Total</td>
<td>1141</td>
<td>1141</td>
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### Total A&D

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### Total Organic + A&D

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### Strategic Options

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<td>Liberalization</td>
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<td>North Sea</td>
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<tr>
<td>Offshore</td>
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<td>Total Strategic Options</td>
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### Total Grand Total

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### FOIA Confidential

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RJW00321212
## Appendix D: Proved Reserves Schedule of Authorities


<table>
<thead>
<tr>
<th>Title of document</th>
<th>Responsible, Preparation</th>
<th>Responsible, Approval</th>
<th>Final submission for use to</th>
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</thead>
<tbody>
<tr>
<td>1 Proved Reserves Replacement Target Setting</td>
<td>HRC, ExCom</td>
<td>ExCom</td>
<td>HRC</td>
</tr>
<tr>
<td>2 Reserves Audit Reports</td>
<td>GRA</td>
<td></td>
<td>EPB, RBD and OU</td>
</tr>
<tr>
<td>3 Resource Management and Reporting Guidelines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Process, responsibilities, definitions, requirements</td>
<td>HRC, GRA</td>
<td>EPB</td>
<td>OU</td>
</tr>
<tr>
<td>b) Technical methodologies</td>
<td>EPB / EPT</td>
<td>EPT</td>
<td>OU</td>
</tr>
<tr>
<td>c) Matters relating to proved and proved developed reserves estimating procedures</td>
<td>GRA, HRC</td>
<td>EPB</td>
<td>SI-FCGB and OU</td>
</tr>
<tr>
<td>4 Annual reserves return from OU.</td>
<td>OU Technical, Finance</td>
<td>OU TM / FM</td>
<td>GRA, HRC</td>
</tr>
<tr>
<td>5 Audit trail in support of annual reserves return from OU</td>
<td>OU Senior RE</td>
<td>OU PE Manager</td>
<td>OU TM</td>
</tr>
<tr>
<td>6 Standardized Measure Report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- OU annual submission</td>
<td>OU Technical, Finance</td>
<td>OU TM / FM</td>
<td>HRC</td>
</tr>
<tr>
<td>- Group submission to SEC Form 20-F</td>
<td>HRC</td>
<td>EPB, EPF</td>
<td>SI-FCGB</td>
</tr>
<tr>
<td>7 Preliminary report on year-end proved reserves to ExCom</td>
<td>HRC</td>
<td>EPB</td>
<td>ExCom</td>
</tr>
<tr>
<td>8 Reserves Auditor Report</td>
<td>GRA</td>
<td></td>
<td>ExCom</td>
</tr>
<tr>
<td>9 Proved reserves &quot;Letter of Comfort&quot; to external Group Auditors</td>
<td>GRA</td>
<td>EPB, EPF</td>
<td>Group Auditors</td>
</tr>
<tr>
<td>10 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</td>
<td>HRC, GRA</td>
<td>EPB, EPF</td>
<td>SI-FCGB</td>
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</tbody>
</table>

HRC: EPB-P Hydrocarbon Resource Coordinator

GRA: EPB-P Group Reserves Auditor

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RJW00321213
Appendix E: Schematic of Reporting Procedure: Proved Reserves

Part 1: Prior to the end of the Reporting Year

<table>
<thead>
<tr>
<th>Action party</th>
<th>Activity</th>
<th>Comments</th>
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<tbody>
<tr>
<td>ExCom December, previous year</td>
<td>Establish target Proved Reserves Additions and target range for the reporting year</td>
<td></td>
</tr>
<tr>
<td>OUs, HRC Monthly</td>
<td>Maintain Latest Estimate of Proved Reserves Additions and SFR Maturation during the reporting year</td>
<td>Via EPMS. Report to ExCom monthly.</td>
</tr>
<tr>
<td>HRC, GRA September, October</td>
<td>Update Petroleum Resource Volume Guidelines (reports EP yyyy-1100 and EP yyyy-1101)</td>
<td>Distributed to all OUs during the reporting year by EPB</td>
</tr>
<tr>
<td>HRC October</td>
<td>Distribute pre-populated Reserves Reporting Workbooks to OUs</td>
<td></td>
</tr>
<tr>
<td>ExCom, EPB, GRA July, November</td>
<td>Advance LI, Opportunity, Estimation and Potential Reserve Catalogue.</td>
<td>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. To include GRA Comments.</td>
</tr>
<tr>
<td>HRC to OUs via RBDs November</td>
<td>Proved Reserves bookkeeping</td>
<td>Advise on major bookings to be accelerated or deferred and debookings to be made.</td>
</tr>
<tr>
<td>HRC, OUA December</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued on the following page

New activities that are proposed are shown in shaded boxes.

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

HRC: EPB-P Hydrocarbon Resource Coordinator
GRA: EPB-P Group Reserves Auditor
Part 2: After the end of the Reporting Year

- **OU and RBDs**
  - January, weeks 1 & 2

- **HRC, GRA**
  - January weeks 2 & 3

- **HRC, OUs**
  - January week 3

- **HRC**
  - January weeks 3 & 4

- **HRC, GRA, FCGB**
  - January week 4

- **HRC, EPB**
  - January week 4

- **GRA, External Auditors**
  - End of January

- **GRA, HRC**
  - End of January

- **HRC, GRA**
  - End of January

- **KPMG**
  - End of January

- **HRC, EPB**
  - Early February

- **HRC**
  - Early February

- **HRC, EPB**
  - End of May

---

**Reserves Meeting**

- Report and Presentation of proved reserves information to external auditors and Group Controller (FCGB).

**Confirmation to PWC from KPMG**

- Letter to Group External Auditors.

**Final report to ExCom and CMD on year-end proved reserves**

- Note for Information plus presentation if required.

**Parent Company Annual Report**

- Reserves figures passed to SI-FCGB. Including copy of installed schedules from External Auditors.

**EP Reserves and Scope For Recovery**

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

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RJW00321215