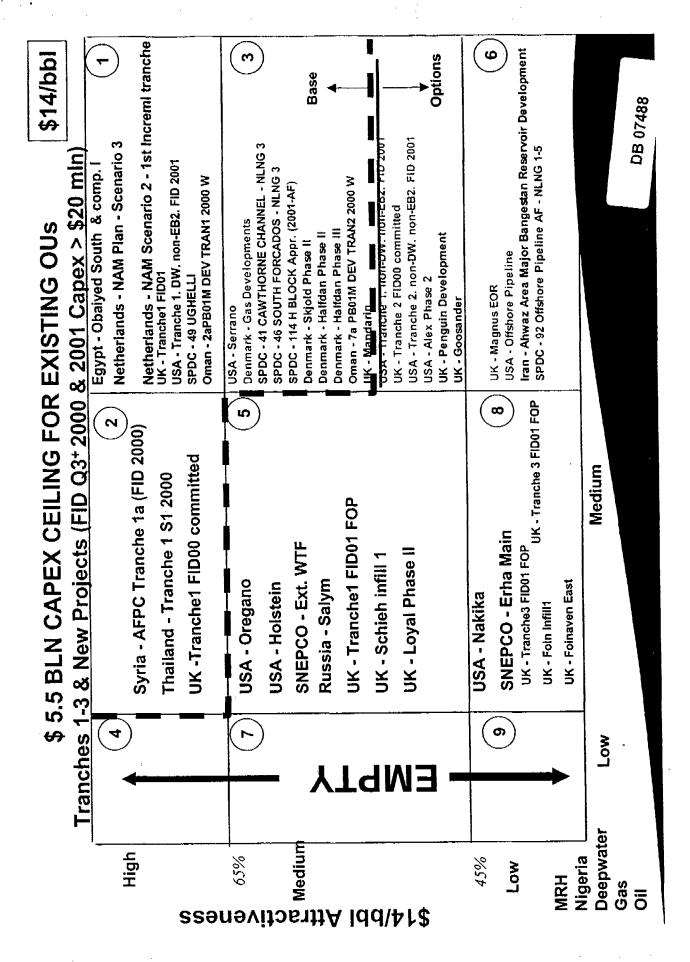
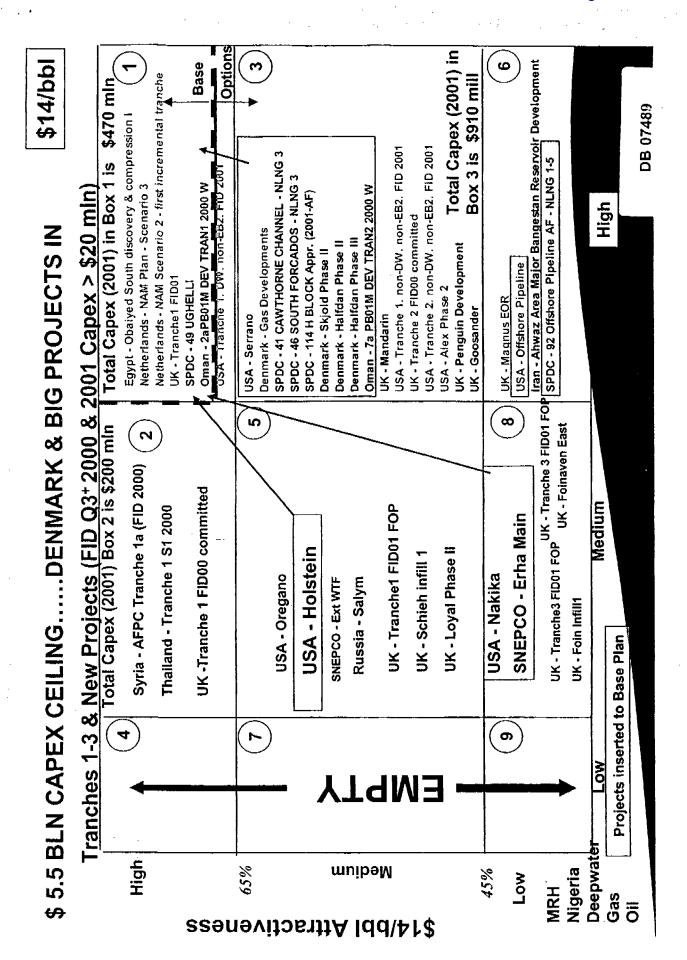
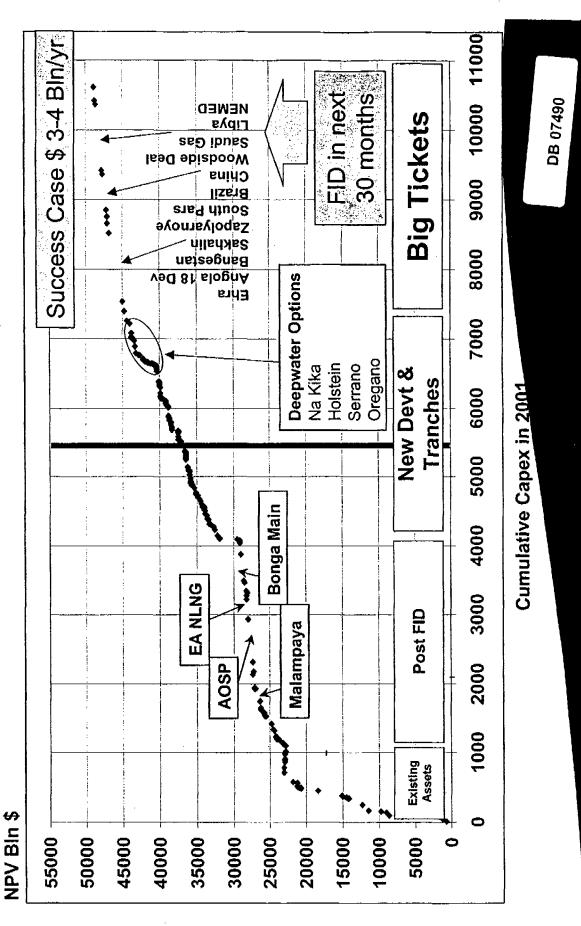
Existing Assets / Post FID Ranking (2001 Capex > \$20 million)





CAPEX CREAMING CURVE



The Way Forward..(1)

We accept the flaws in the process, challenge the submissions at the workshop, build the 2000 Plan and make a "promise adjustment" at Excom level:

- existing assets minus 200 Million US\$
- post-FID minus 400 Million US\$
- weed out "false promises" to the tune of 400 Million US\$
- adjust production promise

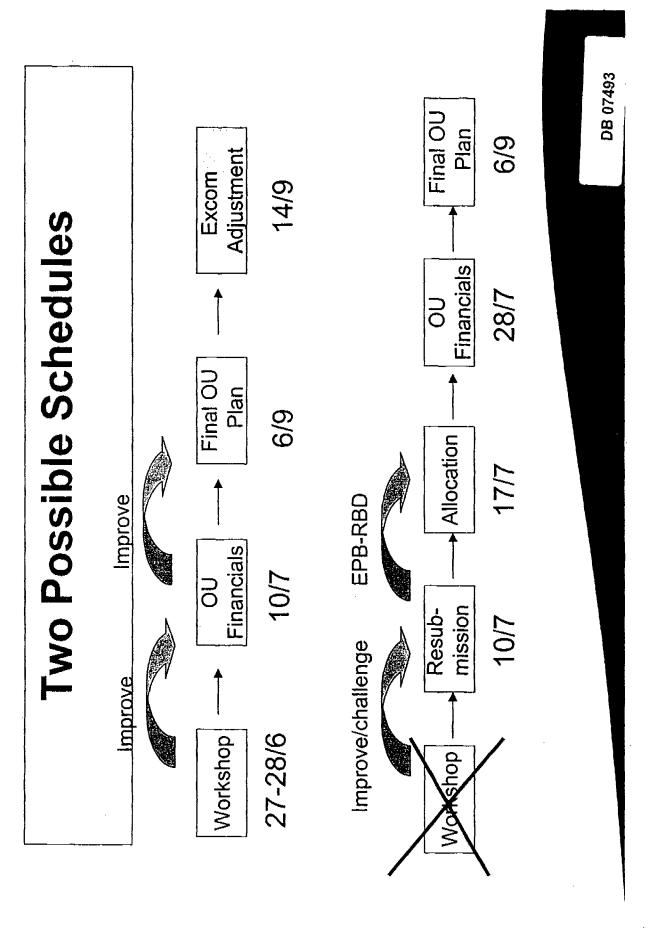
Manage Improvement through the scorecards

We must address the integrity flaws in the CA process and send a very strong signal...

he Way Forward..

We demand a resubmission...we change the workshop:

- We explain our problems to the delegates at workshop.
- We ask the delegates to return to their OU/NVOs and rework their submissions and restore reality
- Key OU/NVOs will be invited for a hard challenge session with the Excom (large OUs) or their RBD.
- After resubmission of sanitised data, a final ranking will be done with the RBA/RFA community.



ACKUPS

FOIA Confidential Treatment Requested by traditional OUs

to be dominated

Value continues

KEY METRICS - RAW DATA

Base

	Capex 2001	IBV \$14	Boe/d 2001	Capex 2001 IBV \$14 Boe/d 2001 Boe/d 2002 Boe/d 2003	Boe/d 2003
Deepwater	454	5418	395	438	386
Gas	1238	16551	1351	1323	1361
MRH	278	34	139	180	205
Nigeria	1291	4509	265	288	494
Oil	2308	14271	1586	1524	1438
Total	5570	40783	3735	3754	3884

production growth

dominance of

Nigeria

not reflected in

value

Deepwater excludes SNEPCO
Ranked out production in 2001 63,000 bbls/d
Does not reflect QUs outside EP control - (SOGU)

	Capex 2001	IBV \$14	Capex 2001 IBV \$14 Boe/d 2001 Boe/d 2002 Boe/d 2003	Boe/d 2002	Boe/d 2003
Deepwater	520	29176	2	33	100
Gas	469	20702	12	65	139
MRH	83	1582	0	5	12
Nigeria	220	4116	7	38	1 59
Oil	466	40374	41	169	286
Total	1757	65950	63	312	597

DB 07495

Options

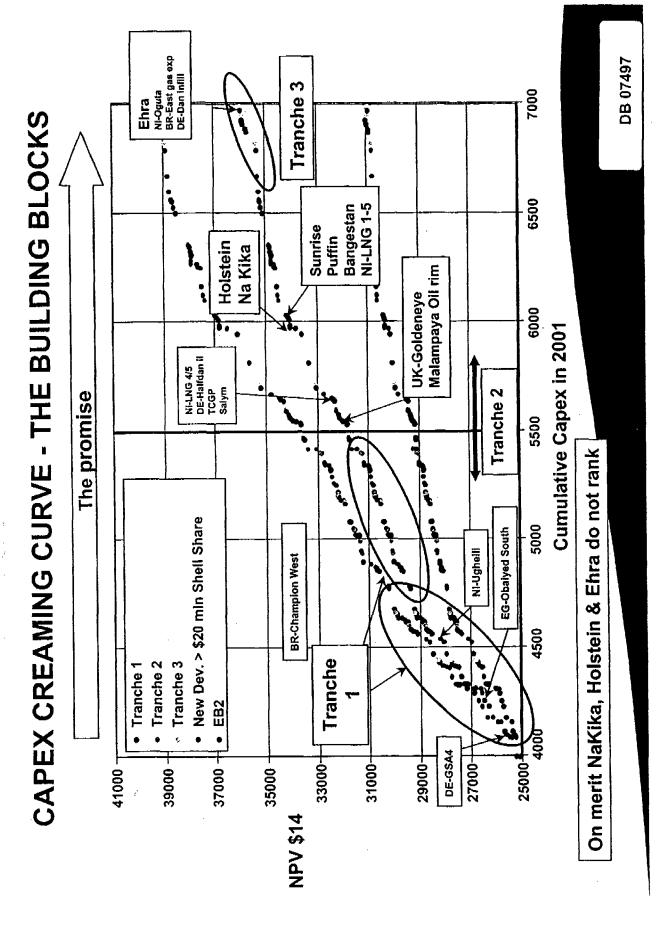
SHORT TERM OPPORTUNITIESRANKED OUT

Short Term Oil Projects are predominantly in Shell Expro...

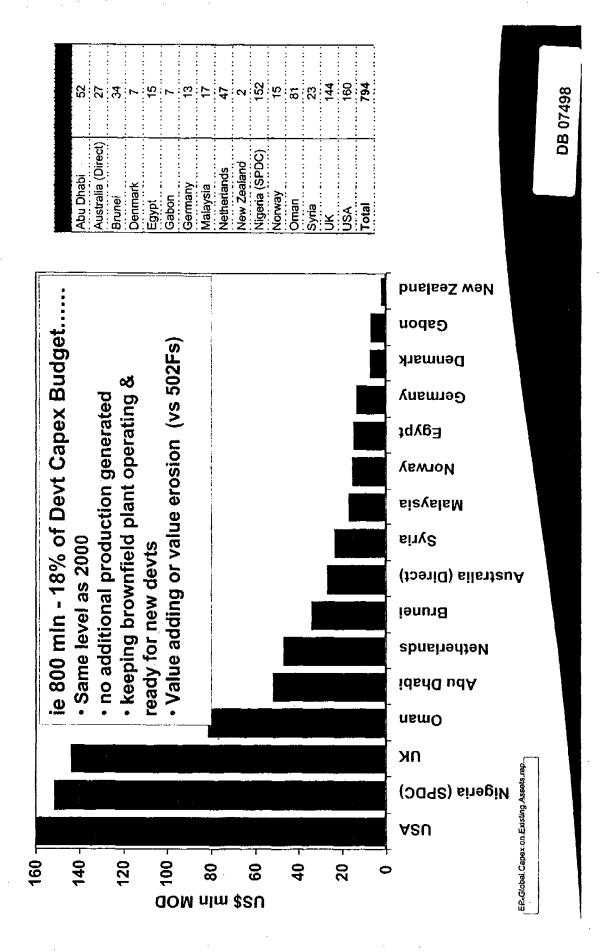
Country Name	Project Name	CA Cat	FID yr	Status	2001 Capex	2001 MBOE/d
ĽĶ	Tranche 2 FID00 FOP	Tranche 2	2000	Option	5.96	4.40
ž	Tranche 3 FID00 FOP	Tranche 3	2000	Base	12.60	21.27
ž	Tranche1 FID00 FOP	Tranche 1	2000	Base	15.46	22.73
ž	Tranche1 FID01 FOP	Tranche 1	2001	Option	25.23	5.08
ž	Tranche1 FID02 FOP	Tranche 1	2002	Option	0.29	00.0
놀	Tranche2 FID01 FOP	Tranche 2	2001	Option	8.51	1.03
충	Tranche2 FID02 FOP	Tranche 2	2002	Option	00:00	0.00
ž	Tranche3 FID01 FOP	Tranche 3	2001	Option	31.91	2.39
夫	Tranche3 FID02 FOP	Tranche 3	2002	Option	00.0	0.00
			Sum:		99.94	56.89

UTCs \$3.5 - 5.5/bbl VIRs [\$14] 0.4 - 0.8 low / medium strategic fit. ...

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"EXISTING ASSET" CATEGORY CAPEX 2001



DB 07499 **Shers** Venezuela OIL & GAS PRODUCTION 2001-2005 BY OU **Dnalland** Nigeria Largest producer by 2005 with threefold growth! Argentina 2002 2003 2004 2005 2001 £θλbį Gabon Raw Data Submission Syria - 10 OUs~ <100 kboe/d OUs by 2005 -still only 2 OUs ~ 300+ Kboe/d S/S -5 OUs ~ 200 - 300 kboe/d by 2005 -3 OUs ~100 - 200 kboe/d by 2005 920A) sbans (AOSP Շեւացոչ Itan Without Nigeria growth,... Australia (Direct Production dominated by the Norway big three in plan period dsdQ udA ODSIÐ) nsmO Denmark Brune Malaysia Netherlands Oil Production by Country, CA-Category, Thema.rep Oman Nigeria ΛK 000 poe/d ASU 800 7007 **1009** 500 4004 900 300 2007 1.000-100-

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A few Outcomes from the Raw Data..

Raw data quality is good,

.....but there is a large request will be a tough competition for fundsLarge number of attractive new devts & tranche funds Large amount of funds for existing assets & Post FIDs ca \$4 Bln To maintain oil production requires ca \$5 Bln, with 100 % delivery Before we consider more capex funds.....there are some issues....

.....Last years E&A followup developments have largely not materialisedVAR programme will have to be accelerated to meet FID planned ... Most post FID projects have been under delivering production But new devt "promises" are different from Vol- 1 findingsMost projects have aggressive schedules vs Vol-1 reality

How do we avoid an "over promise & under delivery" cycle...?

KEY ISSUES

CURRENT PERFORMANCE

Production under-performance

· 1999: UK, Egypt, SPDC, Syria, Netherlands

2000 LE: Oil : Essentially on target but SPDC,

Gas: Egypt, Argentina, Netherlands, US

Major New Project Delivery

- 1999 on-stream disappointments due mainly to project schedule delays
- 2000 onwards (CA 2000) suggests production under-delivery (sub-surface & facilities)
 - Reserves Replacement
- 2000 LE 24 % with major concerns throughout Plan Period

FUTURE PROMISES

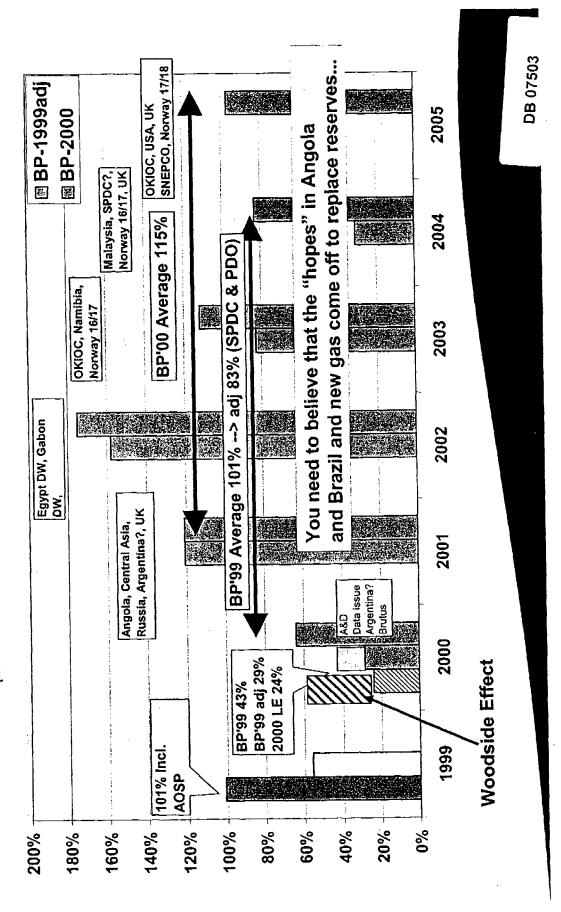
- Continued reliance upon Nigeria (and our ability to grow oil production there)
- Need to avoid over promising and under delivering cycle.
- Continued pursuit of major Capex spend outside of existing portfolio ..are regretting oil?

टिentral Asia 📷 **DB 07502** CAPEX SPEND 2001 BY COUNTRY - Raw Data Submission idsdQ udA Venezuela Total Capex request 2001 = \$7.1 \$ 2.7 bin bnslisdT The tail = 10 % ustralia (Direct) Gabon slognA Total Commitments = **Argentina** Syria STEP Canada Philippines Egypt Brunei Next 10 countries requested 30% of Brazil Russia (Rest of) total Capex **Netherlands** ssia (Sakhalin Holding) Norway requested 60% of uemo Top 5 countries lran EP-Global Committed Capex in 2001 by CA-Category.rel total Capex Malaysia Denmark Nigeria (SNEPCO) WP.C.M. NK Nigeria (SPDC) ASU 1400⊤ 1000-1200-800 4 6 9 dom nim \$su

RESERVES REPLACEMENT - RAW DATA

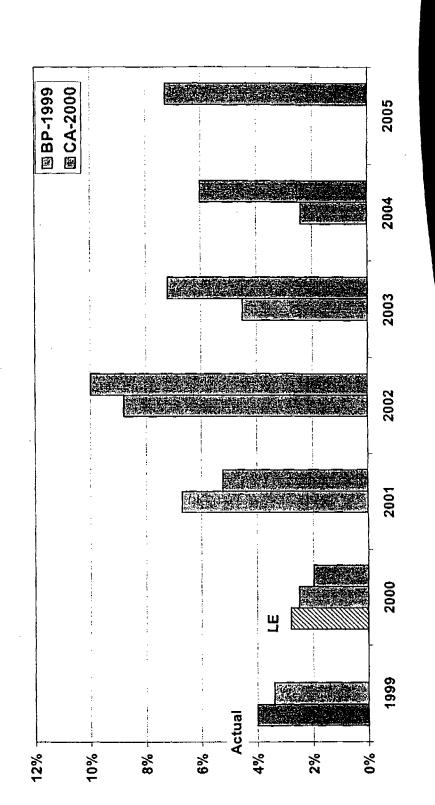
Proved Reserves Replacement Ratio

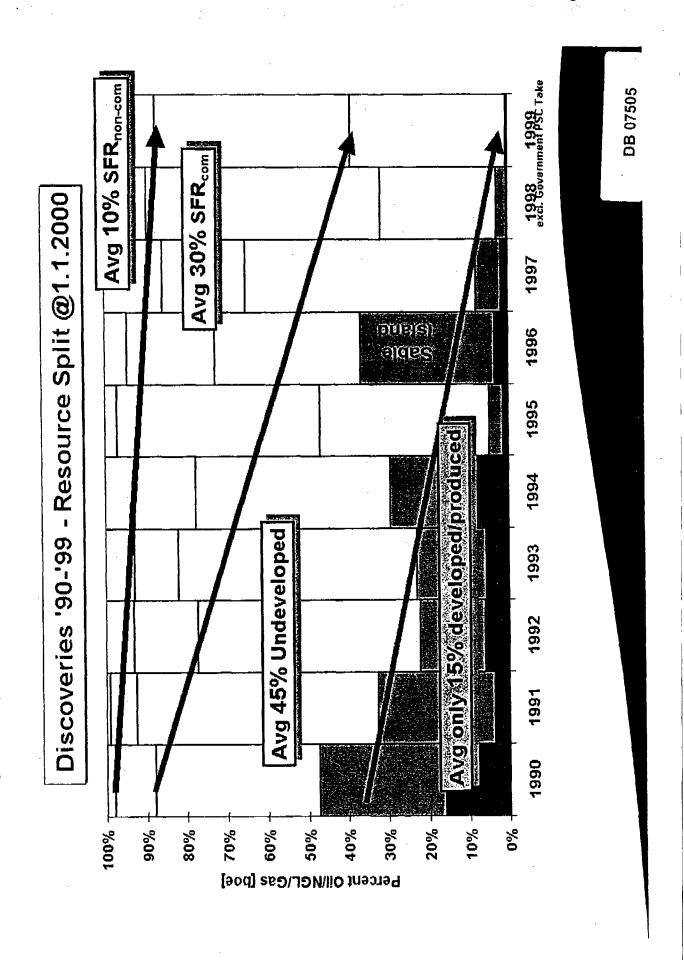
(BP-2000 raw data excl Canada & Woodside - SPDC to be updated)



SFR MATURATION RATES - RAW DATA

SFR_{com} Maturation to Expectation Reserves



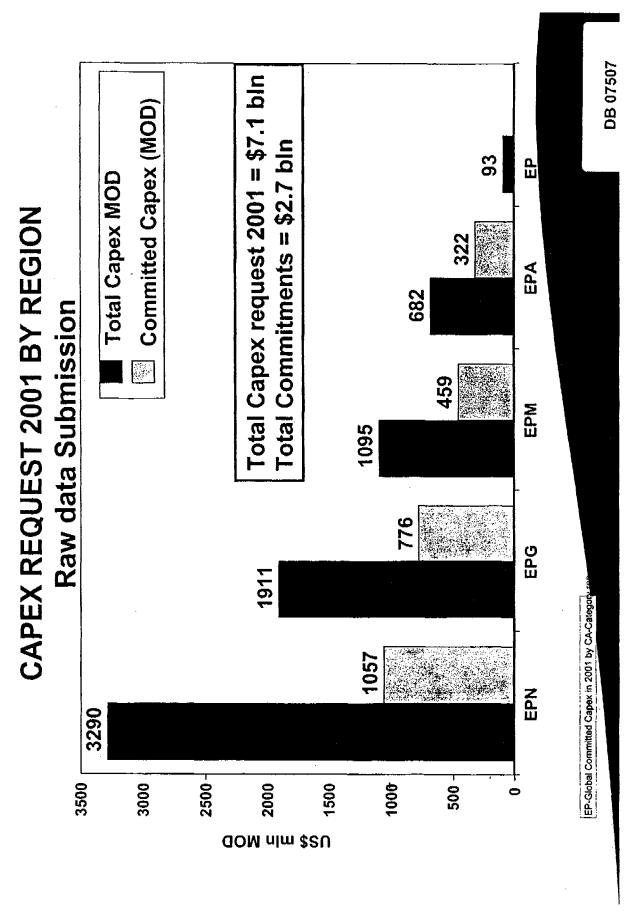


IBV raw data submission versus 1999

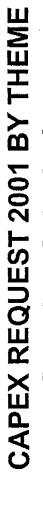
data assumes all planned 2000 FIDs are achievedunlikely based on LE 999 & 2000 value creation is limited......

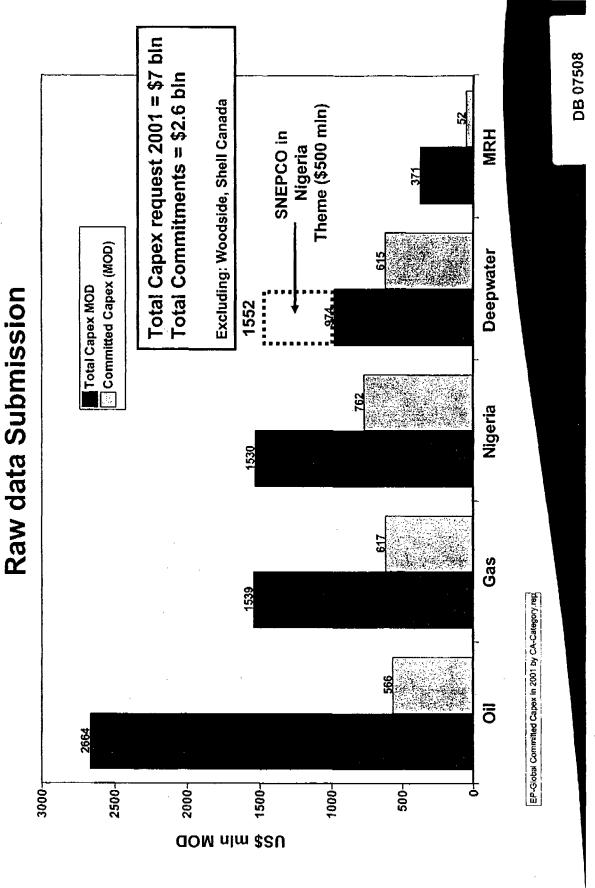
highly optimistic forward looking 2001 to 2005 (Nigeria assumed growth not likely...)

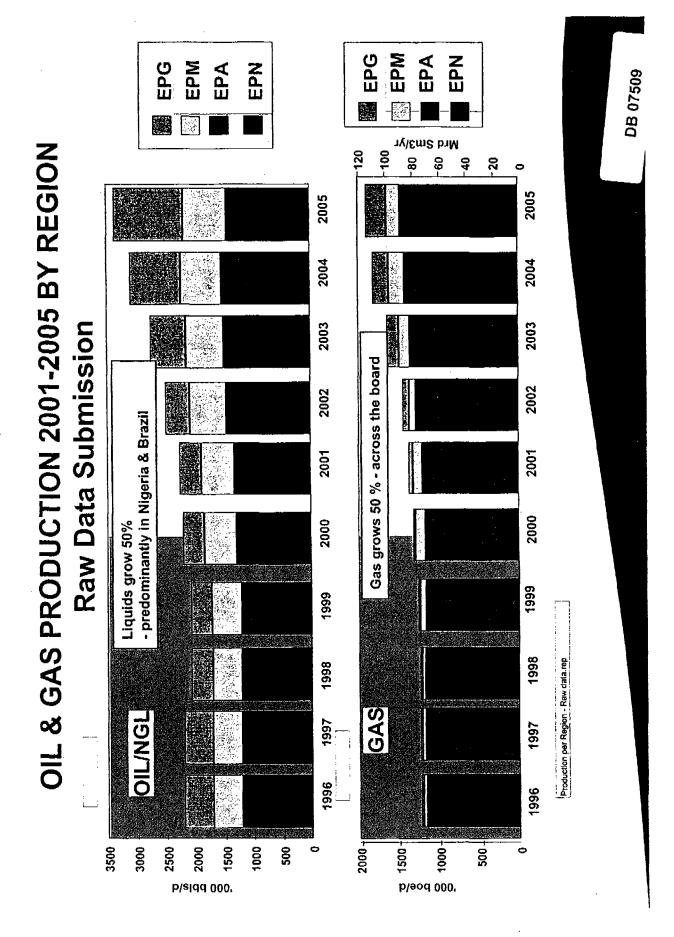
1999 Plan **2000 Plan** DB 07506 eg 2001 assumes we take roughly one big project FID per month (ranked in).... 2005 23% 2004 21% 2003 15% 2002 The promise 1% 2001 % 2000 The delivery 1999 5% 1998 10000 80000 70000 00009 40000 20000 50000 30000 **IBAc Min US**

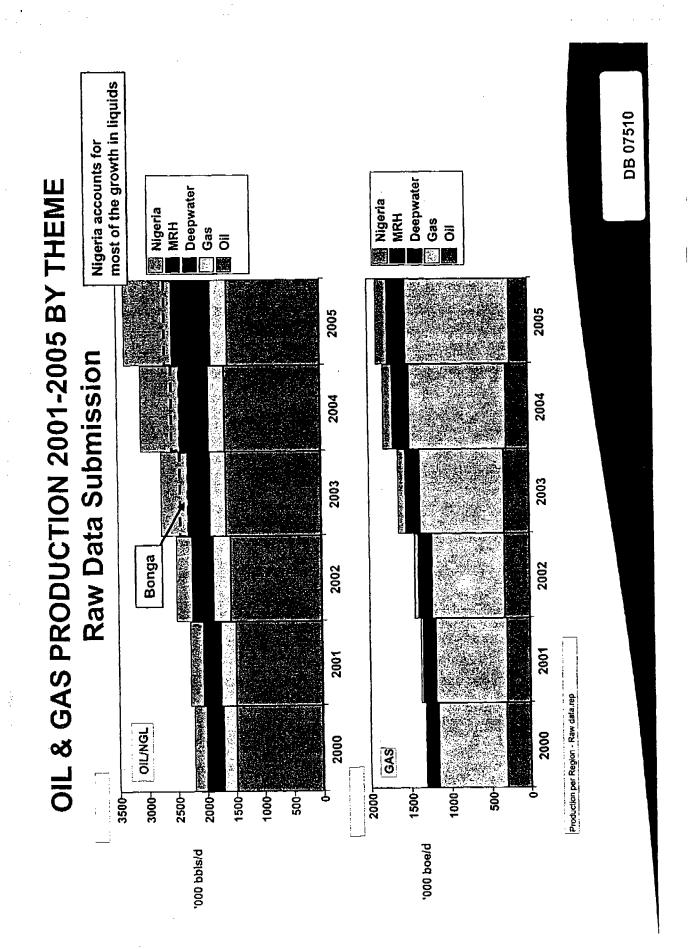


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KEY METRICS - RAW DATA

Nigeria dominance of production growth not reflected in value Value continues to be dominated by traditional OUs......

	<u>Z</u>				
	Capex 2001	IBV \$14/bbi	Boe/d 2001	Boe/d 2002	Boe/d 2003
DW	570	5758	396	464	423
NIGERIA	1252	5091	262	299	514
OIL	1317	13946	1727	1699	1635
GAS	2327	15233	1149	1158	1212
MRH	38	-363	43	44	し で
TOTAL	5504	39665	3577	3640	382
					HI PHOLONIA DE LA CALLANDA DE LA CAL
	OPTION		建工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工工	表表がある。	和作者的"新花"的 像等
	Capex 2001	IBV S AR	Bd.4.2 pf	> Boe/d 2002	*Boe/d 2003
DW	319	298	0	9	39
NIGERIA	755	1005	0	21	23
JON MOT		2021	28	167	236
ノリガ	172	2152	15	26	53
₩ EN EN	83	943	0	0	
TOTAL	1375	8869	43	220	352

MRH now includes Venezuela hence no value at \$14

Deepwater excludes SNEPCO

Ranked out production in 2001 43,000 bbls/d

Does not reflect OUs outside EP control - (SOGU)

SUMMARY

- Growth in production is a major challenge
- Existing oil assets decline 50% by 2005 1,700-800 kb/d
- New project schedules & project forecasts need realism
 - Growth story dominated by Nigeria
- Still Big 3 and small 15
- Reserves replacement is a key issue
- · Brazil, Angola, CIS new hope and OKIOC

Need to calibrate to ensure BP'2000 does not under deliver. Given the bullishness of submissions....

Backups

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	EP / GP Linked Projects (FID < 3 years)	(FID < 3 year	(S)	,	
		Capex 20 Ranking	01 Option Capex (\$ mill)	Capex Matrix Pos.	EP/GP Lead
Malavsia	MLNG Tiga	Base	24	ო	GP
Australia	NWS LNG Train 4	Option	4	9	GР
	ALNG Train 1	Option	1	ro.	GЪ
China	Ordos / Changbei	Option	•	Expex (in)	급
Russia	Piltun-Lunskoye	Option	•	Expex (in)	П
Eavot	NEMed SMDS	Option	1	Expex (in)	ЕР
Iran	Iran SMDS	Option	7	9	Both
Turkmenistan	T2T Pipeline to Turkey	Option	18	ო	ЕЪ
Saudi Arabia	Saudi Maturation Project	Option			Ш
Nigeria	NLNG 3	Base	501	misc	ůi
7	NLNG 4	Option	45	misc	Д
	West Africa Gas Pipeline	Base	9	က	EP
	Abuia Gas Pipeline	Base	7	က	굡
Venezuela	VLNG	Option	7	9	GР
Namibia	Kudu	Base		1	Ш
		TOTAL (Base)		Port	Portfollo Matrix
		TOTAL (Options)	92	HIGH	2 1 65%

Current Capex Ranking Cut-Off is Box 3 @ 50%

WED LOW

EP/GP Integrated Economics

		EP	EP Ranking	Integrated R	ntegrated Ranking (incl NPV)
		Вох	Attractiveness	Вох	Attractiveness
Australia	NWS Train 4	9	41%	က	54%
	ALNG Train 1	သ	55%	ro.	48%
Iran	Iran SMDS	ဖ	21%	Ó	41%
Turkmenistan	T2T Pipeline to Turkey	ო	54%	ო	48%
Venezuela	Venezuela LNG	9	34%	က	54%

DB 07515

KEY ISSUES - EP / GP Linked Projects

Upstream Capex		•	:	:	:					1511	1111	101	•	:	:		7	••••
Project Name	MLNG Tiga	NWS LNG Train 4	ALNG Train 1	ALNG Train 2	NAGV Domgas & FLNG	Gorgon SMDS	Ordos / Changbei	Kuqa	Sakhalin (Piltun-Lunskoye)	NEMED SMDS	Iran SMDS	T2T Pipeline to Turkey	Saudi Gas Project	NLNG 3	NLNG 4	West Africa Gas Pipeline	VLNG	Kudu
Country	Malaysia	Australia					China		Russia	Egypt	Iran	Turkmenistan	Saudi Arabia	Nigeria)	.	Venezuela	Namibia

26th JUNE - Position in CA 2000 Sequence

7th June: Exploration Proto-Forum Discussion on expex ranking

13th June: Expex/Capex Data Pack (early rankings/views) to RBAs for Consideration

(EP / SIG Alignment Meetings take place as required per region)

19th June: Some Regions Holding RBAs & OUs Meeting

(Improve data quality & identify implications of expex & capex ranking)

22-23th June: EXPEX Workshop

26th June: EXCOM Raw Data and Issues

27-28th June: CAPEX Workshop

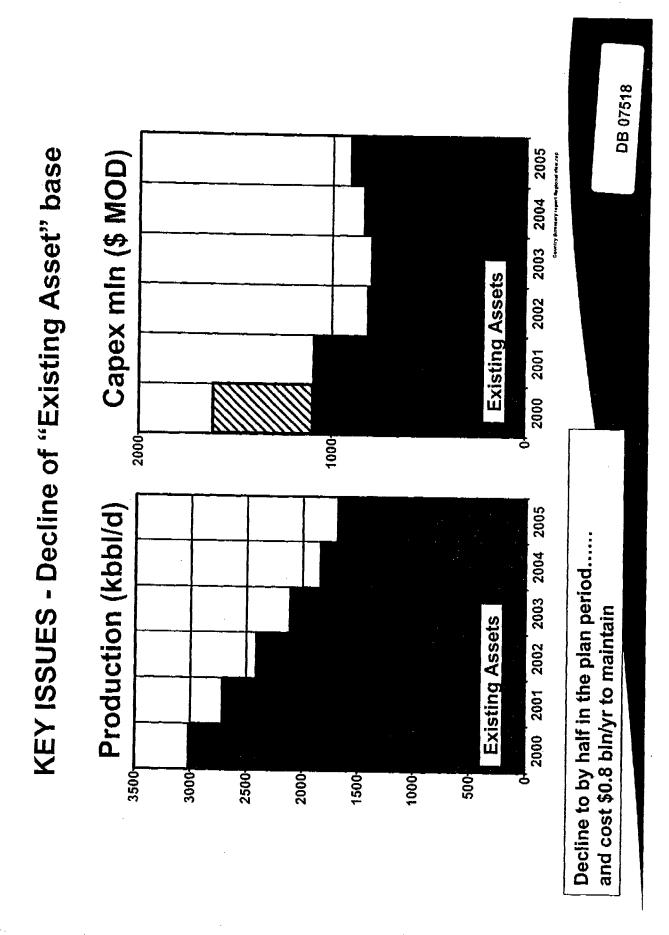
10th July: EXCOM Presentation on Expex, Devt Capex & with Early Financials

14th July: OU Investment level letters (Expex, Capex, etc)

31st July: EXCOM Presentation on Final Expex & Capex

11th Aug: OU Investment Confirmation (as per 2001 Scorecard Outlines)

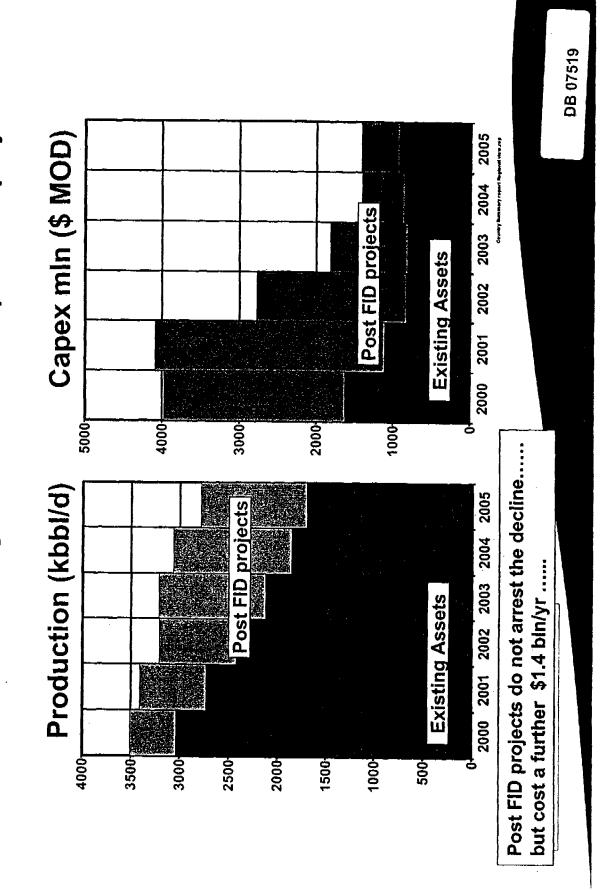
V00120353



FOIA Confidential Treatment Requested

V00120354

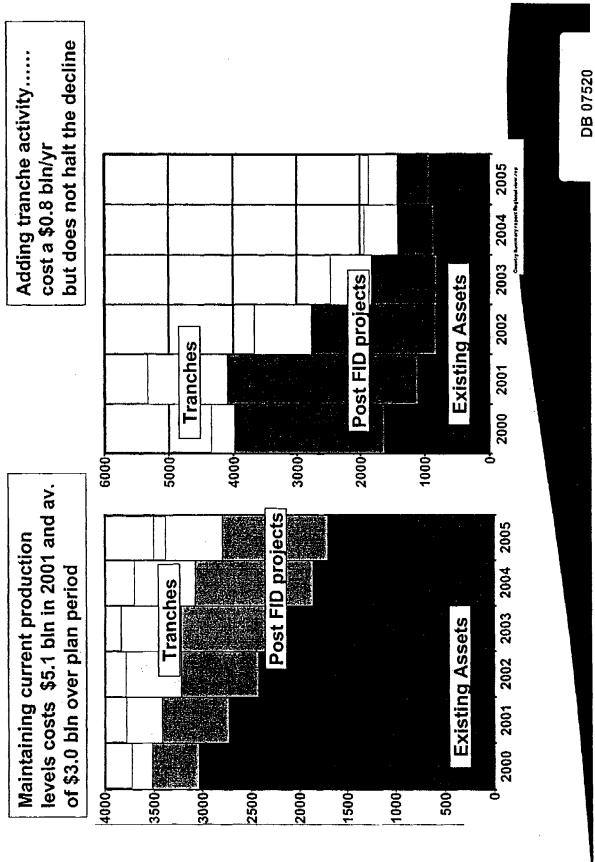
KEY ISSUES - Arresting the decline with post FID projects



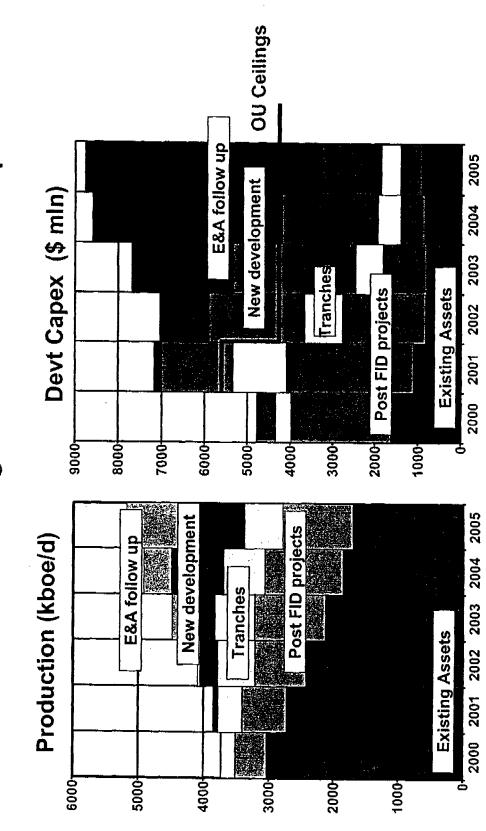
FOIA Confidential Treatment Requested

V00120355

KEY ISSUES - Arresting the decline

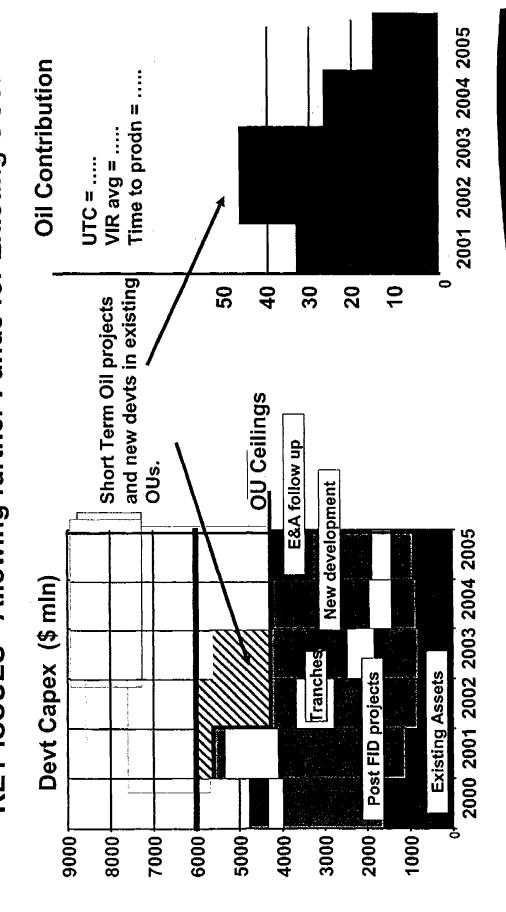


KEY ISSUES Arresting the decline - the new promises



FOIA Confidential Treatment Requested V00120357

KEY ISSUES - Allowing further Funds for Existing OUs.



BIG TICKET ITEMS...Planned to take FID by end 2002/early 2003

Capex Requirements \$	mln (till 2005)	Possible Peo	Possible People Resources Read	<u>Regd</u>
Nigeria -Ehra	900		Nigeria	25+
Egypt - NEMED (no dilute)	7000	Global DW	Egypt	+67
Brazil - BC-10+	029	Business Staffed up	fed up Brazil	25+
Angola - BIk -18	1400		Angola	25+
China deals	009		China deals	25+(?)
Venezuela LNG	7		Venezuela LNG	(3)
MRH Others (Kuwait, Lybia)	009	MRH Entr	MRH Entry Others	25+
Bangestan	740	MRH & CIS	Bangestan	25+
South Pars	370	Business	South Pars	25+
Zapolynaroye	550		Zapolynaroye	50+
Saudi Gas development	2400	Saudi Ga	Saudi Gas development	100+
Sakhalin 40 % Gas devt I	1500	Sakhalin deal & Gas devt	sas devt I	150+
Possibly requiring \$11,000+ mln	n in plan period.	Possibly 500	Possibly 500+ Staff required .	•

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Shell Expro - Existing Assets capex

Existing Assets Capex \$ mln MOD	2001	2002	2003	2004	2005
Brent Gas commitments	30	21	11	-	
Gas Contract commitments	S.	0	က	က	
HSE & legal obligations	2	9	9	2	
Minority shareholder obligations	2	←	~	-	0
Prime Scope Schiehallion	2	15			
Infrastructure integrity	12	10	5	Ŋ	5
Production seismic & subsurface modelling	7	0		4	0
Economic improvement	/	ო	4	2	8
Minor modifications	თ	ω	œ	9	9
Capital overheads	IJ	ო	ო	က	က
Subject to portfolio management	61	ო	8	8	₩.
Grand Total	144	70	42	28	17

BSP Capex Corporate & Existing Assets

Corporate Assets			_	Min US\$ Shell Share, MOD	Shell :	Share, I	MOD	
				BP2001			Plan	Common
		2001	2002	2003	2004	2002	Period	Years
IGPDS	BP2001	4.6	4.0	9.0	0.1	1.4	10.8	9.4
Tariffed resources	BP2001	5.9	5.5	4.4	3.7	1.4	20.8	19,5
Corporate services	BP2001	0.5	0.1	0.0	0.0	0.0	9.0	9.0
Refinery	BP2001	0.2	0.3	0.0	0.0	0.0	0.5	0.5

Product flow Existing assets	 .			MIn US	Min US\$ Shell Share, MOD	Share, I	МОВ	
				BP2001			Plan	Common
	I	2001	2002	2003	2002 2003 2004 2005	2002	Period	Years
	BP2001	2.3	1.9	0.8	0.7	6.0	9.9	2'5
SRU EAST BP	BP2001	3,4	4.5	2.8	6.0	6.0	12.6	11.7
SRU WEST BP	BP2001	3.5	3.7	2.2	0.3	0.1	8.6	2.6

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SRU

CA Category: Corporate

Part of budget for annual upgrades to keep the DM Unix computing infrastructure fit for purpose; essential for continuation of subsurface modeliting, data menagement and alignment with OM/XM systems. Budget (project total US\$ SS 8.8 min) required to replace BSP's legacy of Group Common systems with an integrated solution based on the EP Blueprint. Most Driven by international telecommunication rules as enforced by (TU/JTB (Brune) migration to Ξ 5 ĕ software that is supported (i.e. internally within the organisation or externally). Project to develop database to capture integrity of assets/facilities. Provision 2001 for populating the database using in-thouse resources. will be obsolete 2002/3 and Group/Vendor support will soon cease to exist, . Project necessary to ensure continuity, reliability, availability and expension Datacommunication & Telemetry Networks (LAN & WAN). BSP have 20 servers to provide deaktop services. These are planned to be replaced at the rate of five per year. The replacement of these servers is required to ensure that the quality of the service does not deteriorate. Contract committed (40% VOW D in 2000) to replace/upgrade current application. Budget of 0.26 m in US\$ SS in 2001 is required to complete the Project necessary to ensure confinuity, reliability, availability and expension Radio, Telephony communication Networks and infrastructure. Replacement of servers/equipment to maintain IT infrastructure service The budget covers the application's (lagistics planning/scheduling) existing software is obsolete and no longer supported. Part of budget for annual upgrades to keep the D.L. fil for purpose; essential for continuable management. Ongoing it system replacement, telecom departments). Min US\$, SS 2001 0.10 0.26 0.24 90'0 0.59 0.07 0.03 0.75 0,15 0.21 0.08 0.07 EP Business Systems Strategy implementation LOGOS MIGRATION TO POWERBUILDER OM HARDWARE PURCHASE PHASE 2 AIMS FACILITIES DATABASE PHASE CORTRAN2 IMPLEMENTATION Description EPIDORIS II REPLACEMENT DMR FREQUENCY CHANGE TELECOM MISC PROJECTS FIC CENTRAL SERVICES DATACOM INS NETWORK OM HIW PURCHASE DESKTOP SERVICE IT/Oata Mgmt. IT/Data Mgml. IT/Data Mgmt. IT/Data Mgmt. IT/Data Mgmt. IT/Deta Mgmt. Category

DB 07527

CA Category: Existing Assets

Justification		To meet Group venting target	To meet Group venting target	To meet Group venting target and oil production targets	Minor operational projects to eliminate shutdown and improve facility operability.	To prevent sand erosion failures and optimize production capacity.	Upgrade on the CP-7 Flare required as a result of the recent incident on CP 7	Upgrades and study work on CP-7 Fire water system which has leaks and blockages and may need pump replacements.	Modifications on CP-7 electrical systems - integrity and deferment related	Changeout of existing RTU's which are obsolete and not maintainable. Required for reservoir management and production optimisation	To allow intelligent pigging on critical pipeline.	In-house manpower and consultant related cost for conceptual design study.	Enable testing of East wells for reservoir exercitions optimisation
2001	Min US\$, SS	0.12	0.59	0.74	0.26	0.15	0.29	0.29	0.38	0.15	0.36	0.03	0.07
Description		Magpie Vent to Flare Conversions	CP Natural Flow Implementation phase 2	HSE/ Production CP Natural Flow Implementation phase 1	Field Request Plant Change (FRPC)	Sand Detection	CPFB-7 Flare Upgrade	CP7 Fire Water System	CP-7 Elect Systems Rationalisation	Remote Outstations, Power and Communication	PiMS East 2000 -2002	Concept Design East 2000-2003	Well Test Metering Upgrade
Category		HSE	HSE	HSE/ Production	Integrity	Integrity	Integrity	Integrity	Integrity / Production	Integrity / Production	Integrity/HSE	Other	Production

DB 07528

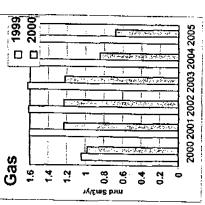
PRODUCTION PERFORMANCE FROM NEW PROJECTS

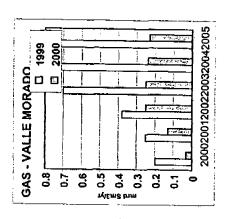


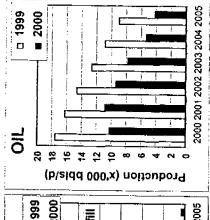


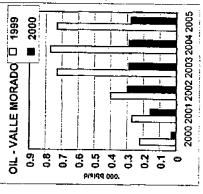


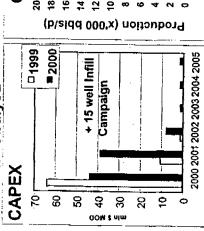
First slippage... hydrocarbons then less forecast

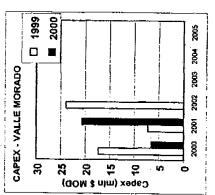












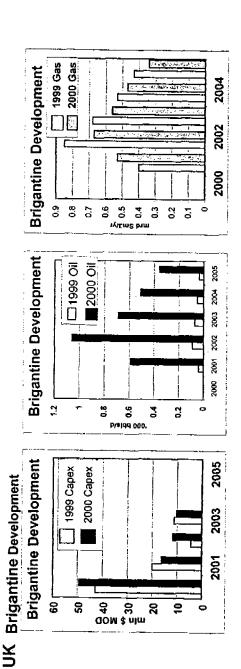
VALLE MORADO

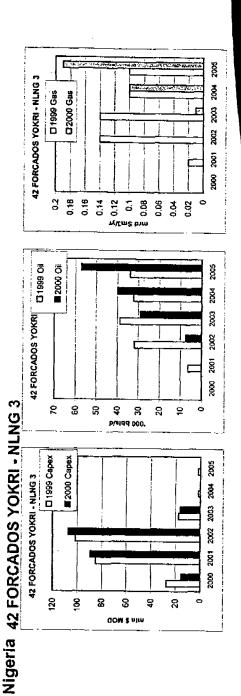
Argentina

DB 07529

PRODUCTION PERFORMANCE FROM NEW PROJECTS







MAJOR Post-FID PROJECTS CAPEX

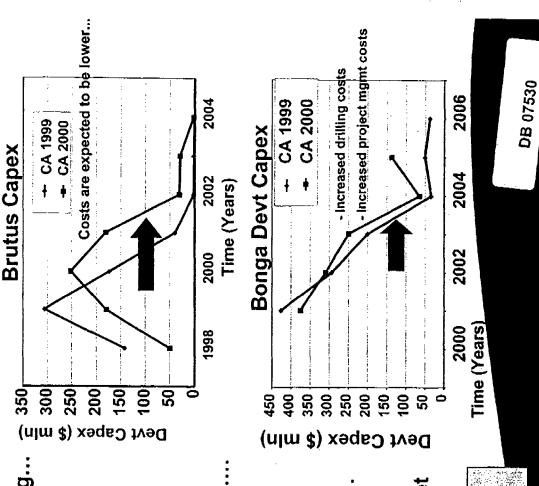
Brutus - indications of capex rephasing... Onstream date unchanged

AOSP - indications that capex 2001 is larger than planned due to slippage in schedule......

Bonga - indications of capex increase..... indications of slippage...... Onstream date unchanged

Nowrooz/Sarooz -2001 & 2002 capex slippage. Onstream date unchanged Shearwater - capex will be under budget & on time....



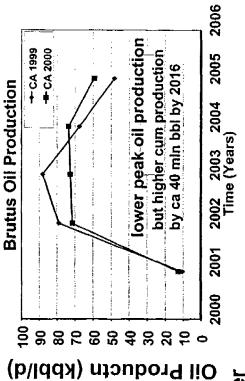


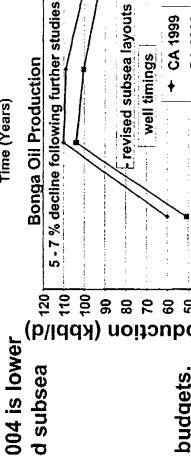
MAJOR Post-FID PROJECTS IN PROGRESS....PRODUCTION

 Peak production in 2002 & 2003 is now lower **Brutus**

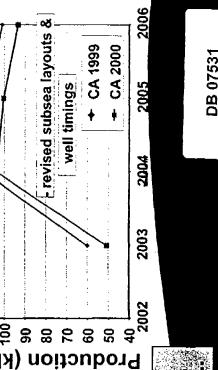
Not a barrel produced yet.....

(Is this a meaningful signal ...





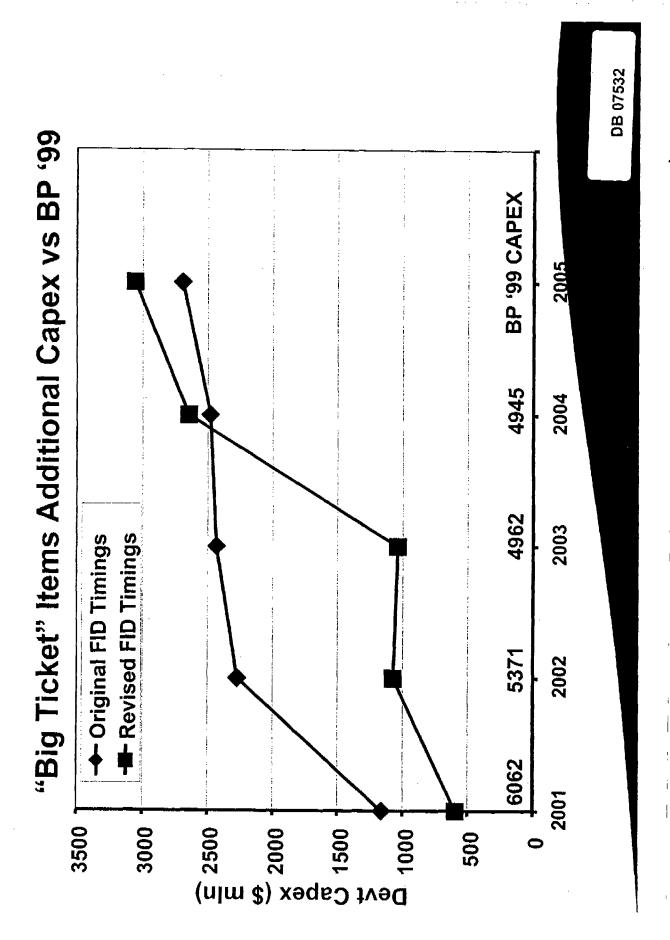
Bonga Oil Production



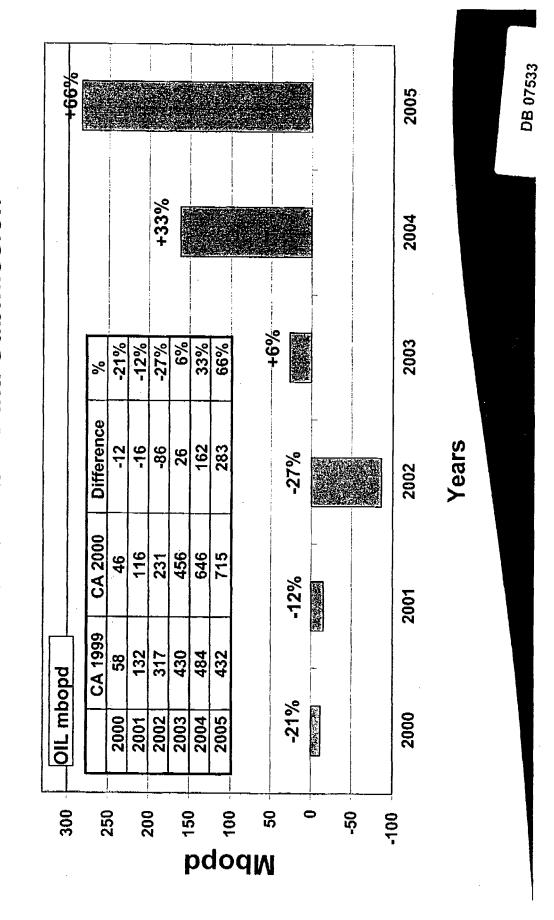
Bonga - Peak production in 2003 & 2004 is lower system remodelling, revised subsea layouts & well timings)

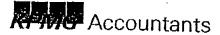
capex will be reduced vs budgets. Shearwater - Production unchanged,

Cannot find examples of increases... Production is lower across the board



Oil Production Difference Major Post FID Projects 1999 vs 2000 CA Raw Data Submission





Office address Churchillplein 6 2517 JW The Hague The Netherlands

Mail address P.O. Box 29761 2502 LT The Hague The Netherlands

Telephone 31(70)3382222 Telex 33170 kpmgh ni Telefax 31(70)3503191

Shell Exploration and Productions International Ventures B.V. Dr. W.G. van Dorp P.O. Box 663 2501 CR. THE HAGUE

The Hague, 11 September 1998

Subject: SIEP Petroleum Resource Volume Guidelines

Dear Mr. Van Dorp,

Thank you for providing us with a copy of the Draft revised Petroleum and Resource Volume Guidelines - Resource Classification and Value Realisation (SIEP 98-1100, Draft August 1998). I have met with you in order to discuss these revised Guidelines and am grateful for the introduction and explanations you have provided me with. This letter serves to document the outcome of our meeting.

You have explained that the purpose of the revised Guidelines is twofold:

- to emphasise to Operating Units (OU's) involved in reserves estimation that this process, both for internal and external reporting, is important for business purposes and value creation;
- to update and improve the methods used in oil and gas reserves determination, with a view
 to bringing these more in line with the rest of the industry. The updated and improved
 methods are expected to lead to higher reported reserves.

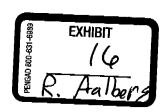
With regard to the first item, we of course support that adequate focus is given at the OU level to the process of reserves determination, also for external reporting purposes.

With regard to the second item, you have explained that the major change to the methods previously documented is that, under certain circumstances, a deterministic approach to estimating proved reserves would be used rather than a probabilistic approach. You have mentioned that in practice several OU's are already applying deterministic methods, principally for mature fields, and the revised Guidelines would accommodate that what already exists in practice.

EĐm



Chamber of Commercia Ammentum no. 33263680



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The revised Guidelines state that probabilistic estimates of proved reserves should be benchmarked against proved reserves estimates based on deterministic techniques consistent with SEC definitions. Where these outcomes are significantly different, the estimate best reflecting shareholder value should be used for external reporting purposes. The revised Guidelines clarify that particularly in mature fields when most of the reserves have been developed, probabilistic estimates of total proved and proved developed reserves can result in values for total proved and proved undeveloped reserves that are no longer reasonable. Once a field is of such level of maturity, the revised Guidelines require a deterministic approach for both proved developed and proved undeveloped reserves, with total proved reserves being the sum of these.

The above would lead to reserves estimation whereby a probabilistic method is used early in the field life cycle with a move to a deterministic method at a later (mature) stage.

With regard to the proposed updated and improved approach to reserves estimates, I have made the following observations:

- As external auditors we are not in a position to either approve or disapprove these revised
 Guidelines, as we are not qualified petroleum engineers or petroleum consultants possessing
 the technical expertise required for an in-depth evaluation of the revised Guidelines.
 - If approval by auditors would be required prior to the revised Guidelines being issued, this would probably be within the remit of the Group reserves auditor.
- We have been informed that the revised Guidelines were discussed in workshops with reserves engineers from eight major upstream OU's and received their broad support.
- The revised Guidelines contain sections on both internal reporting and external reporting. It is presumed that the methods for reserves estimation for external reporting would follow an approach similar to the methods used for internal purposes. I.e., where a deterministic estimate is used for external reporting, it would be expected that this is consistent with the approach taken for business and internal reporting purposes.
- It is noted that the revised Guidelines differentiate between developed and undeveloped reserves in a manner different from the previous Guidelines. In determining developed reserves, the previous Guidelines included that the contribution from existing wells through currently installed facilities should be estimated on the assumption that future development projects will continue. The revised Guidelines state that, when estimating developed reserves from existing wells and installed facilities, no further development activity should be taken into account, thereby taking an incremental approach to future wells and

Accountants

installations. This revised assumption is likely to lead to higher developed reserves estimates. We have discussed this and you would raise with Group Finance that this change could, in certain circumstances, impact the level of depletion of currently installed facilities.

- The appropriate application of the revised Guidelines will be subject to audit at the OU level, to the extent that reserves estimates have an impact on Group returns subject to audit and local statutory financial statements. In this regard I will notify auditors of the major upstream OU's that Guidelines have been revised and encourage them to discuss the revisions and the impact thereof with the local reserves engineers.
- Based on our understanding of the nature of the revisions proposed, this would not constitute a change in accounting principles requiring restatement of prior year information, but rather a change in accounting estimate whereby the effect would be included as a current year revision. Depending on the quantitative effect of implementing the revised Guidelines, a note may be required in the Annual Report explaining the change and, if significant, disclosing the amount of the effect. This position has been agreed with PricewaterhouseCoopers in London.
- For purposes of internal evaluation of reserves progression as well as evaluating the need for disclosure in the Annual Report, it has been advised to monitor the quantitative effect (both reserves volumes and related impact on Net income) due to changes in the reserves estimation method applied.

I would be grateful to receive a copy of the final revised Guidelines and a copy of the covering letter that will be issued to OU's.

Please do not hesitate to contact me if you need to discuss any of the above.

Yours sincerely,

E. Eeftink

Copy: Mr. Steve Johnson, PricewaterhouseCoopers - London

I KA

From:

Aalbers, Remco RD SIEP-EPB-P

To:

Bell, John J SIEP-EPB-P

CC:

BCC:

Sent Date:

2001-01-26 12:50:47.000

Received Date:

2001-01-26 12:50:47.000

Subject:

FW: 2000 Reserves

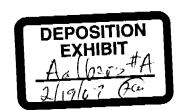
Attachments:

fyi

Met vriendelijke groeten / With kind regards.

Remco D. Aalbers

Group Hydrocarbon Resource Coordinator & Senior Planner **EPB-P SIEP BV** Tel. +31 (0)70 - 377 2001 (fax: 2460)



e-mail: remco.rd.aalbers@sepivbv.shell.com <mailto:remco.rd.aalbers@sepivbv.shell.com>

----Original Message----

From: Bell, John J SIEP-EPB-P

Sent: Tuesday, January 23, 2001 12:54 PM

To: Ewart, Pauline P SI-MGDPW

Cc: Brass, Lorin LL SIEP-EPB; Aalbers, Remco RD SIEP-EPB-P

Subject: RE: 2000 Reserves

Pauline,

Thanks. We can indeed do it by picturetel at 1600 UK time (1700 NL time). I will call you later to fix arrangements.

John

----Original Message----

From: Ewart, Pauline P SI-MGDPW Sent: dinsdag 23 januari 2001 11:20

To: Bell, John J SIEP-EPB-P Cc: Brass, Lorin LL SIEP-EPB Subject: RE: 2000 Reserves

Phil is in The Hague on Tuesday but has a full day from 0745 plus CMD starting at 0830. He is back in London on Wednesday - could you do it by PictureTel, say 1600 (UK time)? Pauline

----Original Message-----

From: Bell, John J SIEP-EPB-P Sent: 23 January 2001 09:37 To: Ewart, Pauline P SI-MGDPW Cc: Brass, Lorin LL SIEP-EPB Subject: FW: 2000 Reserves

Pauline,

Phil has asked that we spend sometime with him early next week to go over the reserves statement for 2000. Any chanvce of an hour with him on Tuesday or Wednesday (preferably in the Hague)?

Thanks

John

----Original Message-----

From: Brass, Lorin LL SIEP-EPB Sent: dinsdag 23 januari 2001 7:31 To: Bell, John J SIEP-EPB-P

Cc: Aalbers, Remco RD SIEP-EPB-P

Subject: RE: 2000 Reserves

I doubt it's so much about who's signature as the fact he want to be in the loop as to the numbers. A very important set of numbers always. I will be back in town for meetings Monday. How about:

1. Finish staff work this week.

2. Send results to me (and Dominique) electronically by Friday.

3. I (and Dominique) review and sit down with you and Remco Monday morning.

4. You send a summary to Phil Monday and the two of review with Phil on Tuesday (he I shere in The Hague early next week although he has CMD so will have to be sandwiched somehow).

----Original Message-----

From: Bell, John J SIEP-EPB-P Sent: 22 January 2001 22:49 To: Brass, Lorin LL SIEP-EPB

Cc: Aalbers, Remco RD SIEP-EPB-P

Subject: RE: 2000 Reserves

Lorin,

Remco will be ready with his analysis and Note for Information to ExCom by end this week. He believed that You (not Phil) had to sign off the reserves statement for the external auditors and was targeting next week Thursday (1/2). He meets with KPMG and PWC on Friday 2/2.

I will touch base with you tomorrow a.m. with Remco . I am happy to take Phil through the stuff with Remco whilst you are away.

Case 3:04-cv-00374-JAP-JJH Document 341-5 Filed 10/10/2007 Page 53 of 69

John

-----Original Message-----

From: Brass, Lorin LL SIEP-EPB Sent: maandag 22 januari 2001 21:48

To: Bell, John J SIÉP-EPB-P Subject: FW: 2000 Reserves

John, ?

----Original Message-----

From: Ewart, Pauline P SI-MGDPW On Behalf Of Watts, Phil PB SI-MGDPW

Sent: 22 January 2001 13:08 To: Brass, Lorin LL SIEP-EPB

Subject: 2000 Reserves

Lorin.

Please tell me the sequence of events according to which I will sign off the reserves report for 2000. I need enough time to be taken through the stuff personally.

Phil Watts
Group Managing Director
Royal Dutch/Shell Group of Companies
Shell Centre London SE1 7NA

Tel: +44 (020) 7934 5556 Fax: +44 (020) 7934 5557

Internet: Phil.B.Watts@Sl.shell.com

From:

Aalbers, Remco RD SIEP-EPB-P

To:

Van Poppel, Johannes JC SI-FCG

CC:

Jespers, Bea BL SIEP-EPB-P; McKay, Aidan A SIEP-EPB-P

BCC:

Sent Date:

2001-02-05 10:19:32.000

Received Date:

2001-02-05 10:19:32.000

Subject:

FW: ARPR 1/1/2001 - proved reserves finalised

Attachments:

Hans,

Attached note that went out this morning - asked Reserves FP to pass on to their finance staff involved.

Met vriendelijke groeten / With kind regards.

Remco D. Aalbers

Group Hydrocarbon Resource Coordinator & Senior Planner EPB-P SIEP BV Tel. +31 (0)70 - 377 2001 (fax: 2460)

e-mail: remco.rd.aalbers@sepivbv.shell.com

DEPOSITION
EXHIBIT
AG | pers # B

2 | 19 | 6 7 | De

----Original Message-----

From: Aalbers, Remco RD SIEP-EPB-P Sent: Monday, February 05, 2001 11:18 AM

To: Albert Paardekam; Alexander Boertje; Bram Sieders; Brice Peterson; Christian Schroder; Daniel Truempy; David Walsh; Derek Gardiner; Eduardo Boschero; Frits Eulderink; Frode Linge; Gilles Bertherin; Gordon Parry; Grigore Simon; Guy Janssens; Hans Horikx; Hans-Florian Wiese; Hendrik Leegte; Herman Meijerink; Jeroen Hoonhorst; John Allen; John Hoppe; John Pay; Jonathan Gordon; Linda Hubner; Luc Staal; Matt McShee; mauseth; Michael Barnholdt; Min-teong Lim; Mireille Toulekima; Nejib Zaafrani; Neville Beston; Ojo Sanni; Osman Tosun; Pedro Balaguera; Peter Grieve; Phil Hanson; Rhomberg; Richard Cicalo; Rod Sidle; Said Abri; Sarah Bells-Williams; Sean Mcfadden; Sheila Graham; Stephen Pang; Sub Sen; Taylor; Theo Natris; Thomas Holling; Van Luijk; Vinay Lajmi; Vui-leong Lai; Wim Swinkels; Wolfhart Mohr - RAG

Cc: McKay, Aidan A SIEP-EPB-P; Jespers, Bea BL SIEP-EPB-P; Bell, John J SIEP-EPB-P; Jonckheere, Lout LAJ SIEP-EPB-P; Khan, Rahim, G G A R SIEP-EPF

Subject: ARPR 1/1/2001 - proved reserves finalised

Importance: High

Reserves Focal Points.

The proved reserves for the Group have been finalised as of last Friday - 2nd February - after

audit clearance with the Group External Auditors (PWC and KPMG) and support from Group Control (London). The overall results in terms of proved reserves replacement ratio should become public knowledge after publication of the Group's 4Q2000 and Full Year 2000 Press Release coming Thursday - 8th February 2001.

Prior to the external audit clearance the proved reserves were reviewed directly with Phil Watts as EP CEO, who was very pleased with the overall outcome and the hydrocarbon resource management process. He requested me to pass on his appreciation for all the efforts of those involved with reserves estimation and reporting in the OU/NVOs.

I would also personally like to thank you all for your efforts and the efforts of the teams in your respective companies in timely and accurately preparing the resource information. In general the submissions were very good and almost all data submissions were received either by the deadline or in many cases well ahead of the deadline. This is much appreciated and greatly expedites the reserves process.

As part of the proved reserves clearance, KPMG as External Reserves Auditor and Anton Barendregt as the Group Reserves Auditor reviewed the numbers and reporting process; both positively acknowledged that the current resource process has been greatly improved and is increasingly efficient. All 2000 SEC audit recommendations have been included in the 31.12.2000 reserves estimates.

The production tie-in with CERES was much better this year and already very close on initial data submitted. After clarifications and adjustments (some in CERES and some in the reserves) a 100% tie-in has been achieved both for Oil/NGL Production and for Gas Production available for Sale (GPafS). I would appreciate if you could pass this message on to your local finance focal point who assisted in ensuring the tie-in.

There is a growing awareness that hydrocarbon resource management and (proved) reserves replacement is at the heart of a sustainable development of an EP Business. The one-to-one link between projects and hydrocarbon resources in Capital Allocation and subsequent roll-up into the hydrocarbon resource plan, one of the focus areas in the EP Business Plan enforces this message. The hydrocarbon resource promises made in the BP - proved reserves replacement and SFR maturation are part and parcel of the EP & Regional scorecards and are cascaded down on each OU/NVO's individual scorecard. Performance through out the year on the resource KPIs is monitored through the monthly/quarterly MISCOM system and reported directly to EP ExCom - allowing management steer if and when required.

Once more many thanks and let's keep the focus for 2001. Met vriendelijke groeten / With kind regards.

Remco D. Aalbers

Group Hydrocarbon Resource Coordinator & Senior Planner EPB-P SIEP BV Tel. +31 (0)70 - 377 2001 (fax: 2460)

e-mail: remco.rd.aalbers@sepivbv.shell.com

From:

Aalbers, Remco RD SIEP-EPB-P

To:

Dueck, Andrew A SEPI-EPM

CC:

BCC:

Barendregt, Anton AA SIEP-EPB-GRA

Sent Date:

2001-01-25 14:53:02.000

Received Date:

2001-01-25 14:53:02.000

Subject:

RE: Proved Reserves increase - OUTSTANDING!

Attachments:

Andrew,

Ministry - MOG - approved the P85 and Exp (Mean or P50) on 100% PDO basis, irrespective of any licence issue.

What the Group reports as proved reserves is Shell's business, we have to limit to licence period, Shell Share and group reserves guidelines - proved is a combination of P85 and P50 pending maturity of the fields.

Met vriendelijke groeten / With kind regards.

Remco D. Aalbers

Group Hydrocarbon Resource Coordinator & Senior Planner EPB-P SIEP BV Tel. +31 (0)70 - 377 2001 (fax: 2460)

e-mail: remco.rd.aalbers@sepivbv.shell.com <mailto:remco.rd.aalbers@sepivbv.shell.com>

DEPOSITION

----Original Message----

From: Dueck, Andrew A SEPI-EPM

Sent: Thursday, January 25, 2001 3:43 PM

To: Aalbers, Remco RD SIEP-EPB-P

Subject: Oman: Proved Reserves increase - OUTSTANDING!

Remco....some concern re: what has actually been approved by the Ministry - which I will try to confirm with M. Qadri as well. Thanks again for taking the time to clarify for me. Regards, Andrew

----Original Message----From: Crocker, John J.M.

Sent: Thursday, January 25, 2001 3:24 PM

To: Dueck, Andrew A.

Cc: Megat, Zaharuddin Z.; Kersley, Stephen S.

Subject: RE: Oman: Proved Reserves increase - OUTSTANDING!

Andrew.

Good news if true, I hope Remco has not lost sight of the fact that reserves bookings in Oman require the approval of the Ministy. The numbers quoted do not match the most recent set I had seen (which were lower). Could you confirm that these numbers relate to bookings which have been approved by the Ministry?

regards

John

J M Crocker

Regional Business Adviser

EPM

Tel: +31-70-377-6238

----Original Message----From: Dueck, Andrew A.

Sent: 23 January 2001 17:43

To: Kersley, Stephen S. /SEPI /EPM; Crocker, John J.M. /SEPI /EPM

Cc: Megat, Zaharuddin Z. /SEPI /EPM

Subject: Oman: Proved Reserves increase - OUTSTANDING!

Importance: High

A great piece of news to share before Friday's EPM dept mtg.....

I confirmed with Remco that the total/actual proved reserves (Shell Share), for PDO, actually increased 35.1 mln m3 (220.7 mln boe) over 2000 target of 20 min m3 (125.9 mln boe), based on 1/1/2001 reserves data. PDO had reported an LE of 20 mln m3 thru October, updated to 21.9 mln m3 in November.

The impact of PDO increase, for both EP overall and EPM, is that it moves Proved Reserves performance to outstanding! For EPM, proved reserves jumped from Nov LE of 135.1 mln boe to 376.1 mln boe (versus target of 199.4 mln boe).

This is also having an effect on EPM Scorecard overall, possibly moving us from 'below' to 'on target', subject to confirmation of remaining core measures.

Regards, Andrew

----Original Message----

From: Aalbers, Remco R.D.

Sent: Thursday, October 26, 2000 2:04 PM

To: Dueck, Andrew A.

Cc: Crocker, John J.M.; Kersley, Stephen S.

Subject: Oman: Proved Reserves Visit - Group Resource Co-ordinator

Page 58 of 69

Andrew,

Please find the attached fyi - hopefully PDO will manage to increase their proved reserves booking for year end over and above what's currently carried in the MISCOM.

Regards,

Remco

----Original Message----

From: Meiissen, Thomas OQP

Sent: Tuesday, October 24, 2000 14:56

To: Shidhani, Sultan OQP1; TAYLOR, PAUL ONP1; HINAI, KHALID OMP1; Lozano, Jose OYP11; VanSon, Luc OFP1; HAGE, JONIEK OBP1; ODell, Mike

XAP; Kraaijevanger, Hans XAP1; Shidi, Salman GGP1; Stoffels, Peter

UPR1; Abri, Said CEM3; Aalbers, Remco SIEP-EPB-P

Cc: Lamki, Abdulla DMD; Kharusi, Fatma FD; RUITENBEEK, KEES CD; Marhubi, Amran OFM; ZIJLKER, VOLKERT OQM; Evans, Peter OBM; Holtam, Vincent OYM; vanOorschot, Bob ONM; ERLINGS, HANS OMM; Alkemade, Jan GGM; Penneycard, Andy ONP; Myers, Craig OMP; Blair, Iain OYP; Riyami, Abla OFP; Scales, Jeremy OBP; Pieters, Johan GGP; Levell, Bruce XEM; Naylor, Michael XEL; Antonini, Marcus CEM5; Barendregt, Anton SIEP-EPB-GRA; McKay, Aidan SIEP-EPB-P

Subject: Proved Reserves Visit - Group Resource Co-ordinator

Please find attached some notes on the visit of the Group Resource Co-ordinator Remco Aalbers from 23-24 October 2000.

Introduction:

The purpose of the visit was to discuss proven reserves as reported by PDO to the Centre. It was noted that the ARPR 1/1/2000 proven reserves were low when considering the maturity of PDO's resource base. This was also noted during the SEC reserves audit by Anton Barendregt in October 1999. For the ARPR 1/1/2000 a fix was agreed to make proven developed reserves equal to expectation developed reserves, in line with the Group guidelines. This however resulted in a reduction of proven undeveloped reserves as the total proven reserves was unchanged from the P85 as carried by PDO. The visit was to discuss this issue and to define a way forward. Discussions were held with CEM/3, UPR and OBP. Presentations were made to senior REs and the RE community.

Proven reserves PDO (P85):

The uncertainty ratio (as defined by proven / expectation reserves) versus maturity (as defined by cumulative production / expected recovery) of PDO fields was analysed (see plot 1 below). One would expect that fields would have an uncertainty band between 40% and 80% at production start, moving to 100% (without uncertainty) at abandonment. This is indicated by the red and green lines on the plots. As can be observed many fields are well below the expected uncertainty band, despite their relative high maturity.

Furthermore, the quoted proved developed reserves (as prorated from the expected developed reserves) seem low when comparing their respective 1999 field production (see plot 2 below). One would expect a developed reserves / last year production ratio (R/P) ranging from 4.5 to 6, based on a 10 year production forecast at 20% decline (for proven developed reserves) or a 15 year production forecast at 15% decline (for expected developed reserves).

As part of proper reservoir management, the proved reserves should be reviewed as part of the annual update of the reserves, reflecting the increase understanding including additional production. The method of just substracting annual production from the proven recovery results often in unrealistic low (or even negative) proven reserves. At production start, the uncertainty range for developed reserves very much follows the uncertainty range of the volumetric estimate of initial in place volumes. When the field matures, the developed reserves should be based on performance analysis (e.g. decline curve analysis or simulation) and the uncertainty should reduce over time.

Resource submission:

As part of the review the opportunity was taken to review the total resource submission to the Centre. The following observations were made:

- * Undiscovered SFR: not all the exploration potential was included for 1/1/2000 but only the EA-SFR (near field potential). For 1/1/2001, also the identified (prospects) and unidentified (leads) exploration potential should be included.
- * The commercial SFR within licence volumes should be zero under the assumption of a production plateau of 850,000 b/d flat until mid 2012 is already fully supplied by expectation reserves within licence.

Conclusions and action points:

- * All area teams should pay particular attention to establishing the correct proven (P85) developed and undeveloped reserves in line with field maturity and established production performance as part of the annual reserves review. It is recommended to plot the updated reserves in line with the two plots below. Action: all Senior REs.
- * Clarify with MOG the intend to put increased emphasis on updating the proven reserves. Action: CEM/3
- * External reporting of proved reserves in line with Group guidelines will be handled by PDO reserves co-ordinator and the CFDH reservoir engineering. It is recommended to use field maturity in excess of 40% (as expressed in cumulative production / expected recovery) as the criterion to use proved developed = expectation developed. As a result the total proved reserves will similarly increase. This procedure will be further clarified with Group Reserve Auditor Anton Barendregt, Action: CEM/3, UPR
- * To establish proved reserves (within licence) a practical forecast needs to be prepared on the basis of the total proved reserves (as carried by PDO). It is suggested to assume a reduced number of plateau years followed by a decline (15-20%, to be confirmed) such that

the total forecast matches the reserves. This is comparable to the method of establishing PDO's 10 year production plateau based on total expectation reserves as agreed with shareholders. Action: CEM/3 * Based on the above method the total proved reserves (Shell Share) is expected to increase by 20-30 mln m3, based on 1/1/2000 reserves data. Final increase to be established on 1/1/2001 reserves data.

It has been a very useful and productive two days. Many thanks to all involved!

Best regards,

Thomas Meijssen Said Al Abri Remco Aalbers

Aalbers, Remco RD SIEP-EPB-P

From:

Meijssen, Thomas OQP

Sent:

03 January 2001 08:51

To: Cc: C

Barendregt, Anton SIEP-EPB-GRA

Subject:

Aalbers, Remco SIEP-EPB-P; Abri, Said CEM3; Antonini, Marcus CEM5 RE: Proved Reserves Visit - Group Resource Co-ordinator

Anton, Remco.

Many thanks for your Email. Based on the guidelines given in your Email below, we have evaluated the impact on the proven reserves numbers to be used for external reporting using the notional ARPR 1/1/2001 data.

In the table below, a breakdown of the total expected reserves (developed and undeveloped) versus maturity (as expressed in cumulative production / expected recovery) has been given. As can be observed from the table, 61% of the total expected reserves can be classified as mature, using the 40% criterion.

Maturity	Tot Res	%
40-60%	305	39%
>60%	227	29%
Total expectation	255	32%
All values 4000	787	100%

Il volumes 100% PDO, min m3

An overview of the proven and expected reserves as carried by PDO and the impact of using the Shell Group guidelines on externally reported proven reserves has been indicated in the table below.

and the second of the second o	T 00-				
Please P85	DevRes	UndevRes	TotRes	Incr	Incr %
Proved 1999 method	205	220	425		11101 78
Proven DevRes 40%	380	46	425		
Dravon De O	347	220	567	141	0%
Proven, DevRes 40%, UndevRes 60%	347	254	601		33%
1 10 10 10 10 10 10 10 10 10 10 10 10 10	347	304	651	176	41%
Expectation	380	408	787	225	53%
All volumes 100% PDO, mln m3	G. 9	- 1	707		
	27	1 <u>7.</u> 7	171		

> 1928 SS €347

Some remarks: pa

The proven and expectation reserves are as per the reserves bookings, the expected developed reserves are updated annually using the do-nothing production forecast. The proven developed reserves are calculated by prorating the proven/expectation reserves and expected developed reserves. Proven reserves as carried by PDO at 1/1/2001

Expecation: Expected reserves as carried by PDO at 1/1/2001

Proven, 1999 method: Proven reserves, making proven developed reserves equal to expectated developed reserves for fields exceeding 46% methody, but keeping the total proven reserves equal. As a result the proven undeveloped reserves reduces to 46 mln m3 which seems unrealistically low.

Proven, DevRes 40%: Proven reserves, making proven developed reserves equal to expectated developed reserves for fields exceeding 40% maturity, keeping the proven undeveloped reserves equal.

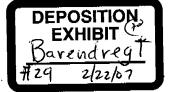
Proven, DevRes 40%, UndevRes 60%: As above, but in addition now making the proven undeveloped reserves equal to the expected undeveloped reserves for fields exceeding 60% maturity (more relaxed criterion, to reflect the additional uncertainty related to the undeveloped reserves).

Proven, DevRes 40%, UndevRes 40%: As above, but using the 40% maturity criterion for undeveloped reserves.

I would propose for external reserves reporting to only adjust the proven developed reserves using the 40% maturity criterion and to keep the undeveloped reserves for internal and external reporting the same (case: Proven, DevRes 40%). As a result the total proven reserves increases by 141 mln m3 (100% PDO). Any further increase in total proven reserves becomes more difficult to argue in view of the additional uncertainty of the undeveloped reserves

Would you agree with the proposed method? Following your advise, I will inform PDO senior management on the proposed method for external reserves reporting to the Shell Group.

Best regards.



FOIA Confidential Treatment Requested

Thomas

To:

---Original Message----

From: Barendregt, Anton AA SIEP-EPB-GRA

Sent: 02 January 2001 16:05

Melissen, Thomas TEM PDO-OQP / UPR

Cc:

Aalbers, Remoo RD SIEP-EPB-P; Abri, Said SM PDO-CEM3; Antonini, Marcus MCJ PDO-CEM5 RE: Proved Reserves Visit - Group Resource Co-ordinator

Subject:

Thomas,

In response to your query, I fully support the conclusions reached during Remco's visit, as reflected in your note of 24th October. In particular, I support the move towards using expectation estimates for the externally reported proved reserves for mature fields (i.e. for fields with cum.prod. greater than 40% of expectation ultimate recovery). I note that the 40% criterion is not necessarily rigorous: for simple clastic light oil waterdrive reservoirs it could easily be set lower, for heavy oil reservoirs or complex carbonate reservoirs like many of those in Oman, it seems a realistic proposition.

As mentioned in my 1999 audit report (Att. 3) we should move away from determining total proved reserves through probabilistic volumetrics, combined with probabilistic estimates of recovery factors. Instead we should make separate estimates of developed reserves (from decline analysis or history matched reservoir simulation) and undeveloped reserves (from reservoir simulation or other reliable predictions). Undeveloped reserves must always be based on a well defined set of future activities (new wells, infill drilling, re-completions etc.).

Each of the two volumes (i.e. developed and undeveloped reserves) can have a probability range (P85, P50, P15, Expectation) associated with it. Group guidelines prescribe that for developed reserves in mature fields we should take the Expectation estimate as the externally reported 'Proved Developed Reserves'. For those mature fields it is expected that the P85 estimate would be close to the P50/Expectation value anyway. For externally reported undeveloped reserves it will often be appropriate to take the expectation value as well, but in some of the more uncertain cases (e.g. different future well types) it may be more appropriate to take the P85 volume.

The externally reported total reserves should be the sum of the developed and the undeveloped reserves

Trust this clarifies. Good luck with your 2000 submission!

Last but no least, I wish yourself and the PDO PE community a successful, safe and healthy 2001!

Anton Barendregt

----Original Message----

From:

Meijssen, Thomas OQP

Sent:

22 December 2000 14:36

To: Barendregt, Anton SIEP-EPB-GRA

Cc: Aalbers, Remco SIEP-EPB-P; Abri, Sald CEM3; Antonini, Marcus CEM5 Subject:

FW: Proved Reserves Visit - Group Resource Co-ordinator

Anton,

With reference to the visit of Remco Aalbers to PDO from 23-24 October 2000, we would like to know your opinion with respect to external reporting of proven reserves. During the visit of Aalbers the following was suggested:

External reporting of proved reserves in line with Group guidelines will be handled by PDO reserves coordinator and the CFDH reservoir engineering. It is recommended to use field maturity in excess of 40% (as expressed in cumulative production / expected recovery) as the criterion to use proved developed = expectation developed. As a result the total proved reserves will similarly increase. This procedure will be further clarified with Group Reserve Auditor Anton Barendregt. Action: CEM/3, UPR

Looking forward to your reply,

Best regards.

Thomas Meijssen **CFDH Reservoir Engineering**

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. RJW00151704



From: Serve To:

Barandregt, Anton AA SIEP-EPB-GRA donderdag 4 januari 2001: 1.7:51 Meissen, Thomas TEM PDO-OQP / UPR

C= Subjects Asibers, Rames RD STEP-EP6-P; Abri, Said SM PDO-CEMO; Antonini, Marcus MCJ PDO-CEMS

RE: Proved Reserves Vielt - Group Resource Co-ordinator

Thomas.

Remco and I have looked at your proposed figures and our comment is as follows:

The ratio between your total P85 and expectation reserves (425 and 787 min m3 respectively) is 54%. This is far too low for a mature area like Oman and indicates that there are fundamental flaws in PDO's present process of calculating the probabilistic range of ultimate recovery in its fields. In essence, it seems that the ranges of volumetric and RF parameters are taken far too wide, as if they applied to virgin fields instead of fields with large numbers of wells and extensive production history. The result is that P85 UR volumes are not increased in line with production performance history. This flew was highlighted during the 1999 SEC reserves audit and again during Remco's visit in October 2000.

Having said that, we appreciate that updating field P85 recoveries to more realistic levels requires 2. discussion with the Ministry and hence may take time. We suggest that priorities are set if necessary,

aiming at updating the P85 volumes first for the largest fields

3. We stress again that the issue of what reserves to report as 'Proved, externally reported' is, since the 1998 changes in the reserves guidelines, quite different from the issue of what reserves to carry as P85 or Low volumes for individual fields. The latter may be subject to discussion with the Ministry, but the first cannot be, if only because the total PDO Shell share volume has to be curtailed at licence expiry, an issue that does not interest the Ministry.

In order to avoid confusion, also internally within PDO, it may be opportune to reserve the term 'Proved' exclusively for the externally reported Proved reserves and use 'P85' or 'Low' (NOT 'Proven') for the high confidence reserves values. We'll consider whether this distinction can perhaps be made more clearly in

future versions of the Guidelines.

As for your proposed volumes to book as externally reported Proved Reserves (before they are cut off by 5. licence expiry), your line "Proven, DavRes 40%, UndevRes 50%" (347 min m3 Dev Res and 254

DEPOSITION **EXHIBIT** Barendreg

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As mentioned, externally reported Proved reserves must be cut off at licence expiry through a realistic 6. forecast. For the recommended case "Proven, DevRes 40%, UndevRes 60%" we estimate a 9-year plateau plus subsequent decline (@20%), leading to a Proved volume after licence expiry cut off (but before 34% Shell share) of some 87% of 347+254 min m3, i.e some 523 min m3. Shell share would then be 178 min m3 1/1/2001, versus 139.5 min m3 1/1/2000, an increase of some 55 min m3 (assuming 2000 prod is some 16.5 mln sm3).

This method results in a proved/exp deviratio of 347/380 = 91% and a proved/exp undeviratio for 254/408 7. = 62% (PDO), values that are much more in line with the maturity of the Oman fields, even if the under ratio is still too low.

We hope the above clarifies. Please let us know if you have further queries.

Best regards,

Anton

-Original Message-

From: Melissen, Thomas OQP Sent:

03 January 2001 09:59 To:

Barendregt, Anton SIEP-EPB-GRA

Aalbers, Řemco SIEP-EPB-P; Abri, Said CEM3; Antonini, Marcus CEM5 Cc: Subject: RE: Proved Reserves Visit - Group Resource Co-ordinator

Anton, Remod.

Please note that the 1999 method used for external reporting made the proven developed reserves equal to expectated developed reserves for all fields (irrespective of their maturity) and kept the total proven reserves

Best regards.

Thomas

-Original Message

From: Meissen, Thomas OOP Sent

03 January 2001 12:52 To:

Barandragt, Anton SIEP-EPB-GRA Asibers, Remos SIEP-EPB-P: Abril, Sald CEMD: Antonini, Marcus CEMS

Subject: RE: Proved Reserves Visit - Group Resource Co-ordinator

Anton, Remoo.

Many thanks for your Email. Based on the guidelines given in your Email below, we have evaluated the impact on the proven reserves numbers to be used for external reporting using the notional ARPR 1/1/2001 data.

In the table below, a breakdown of the total expected reserves (developed and undeveloped) versus maturity (as expressed in cumulative production / expected recovery) has been given. As can be observed from the table, 61% of the total expected reserves can be classified as mature, using the 40% criterion.

<< OLE Object Microsoft Excel Worksheet >>

An overview of the proven and expected reserves as carried by PDO and the impact of using the Shell Group guidelines on externally reported proven reserves has been indicated in the table below.

<< OLE Object Microsoft Excel Worksheet >>

Some remarks:

- The proven and expectation reserves are as per the reserves bookings, the expected developed reserves are updated annually using the do-nothing production forecast. The proven developed reserves are calculated by pro-rating the proven/expectation reserves and expected developed reserves.
- Proven: Proven reserves as carried by PDO at 1/1/2001

OM 000206

- Expecation: Expected reserves as carried by PDO at 1/1/2001
- Proven, 1999 method: Proven reserves, making proven developed reserves equal to expectated developed reserves for fields exceeding 40% maturity, but keeping the total proven reserves equal. As a result the proven undeveloped reserves reduces to 46 min m3 which seems unrealistically low.
- Proven, DevRes 40%: Proven reserves, making proven developed reserves equal to expectated developed reserves for fields exceeding 40% maturity, keeping the proven undeveloped reserves equal.
- Proven, DevRes 40%, UndevRes 60%: As above, but in addition now making the proven undeveloped reserves equal to the expected undeveloped reserves for fields exceeding 60% maturity (more relaxed criterion, to reflect the additional uncertainty related to the undeveloped reserves).
- Proven, DevRes 40%, UndevRes 40%: As above, but using the 40% maturity chterion for undeveloped reserves.

I would propose for external reserves reporting to only adjust the proven developed reserves using the 40% maturity criterion and to keep the undeveloped reserves for internal and external reporting the same (case: Proven, DevRes 40%), As a result the total proven reserves increases by 141 mln m3 (100% PDO). Any further increase in total proven reserves becomes more difficult to argue in view of the additional uncertainty of the undeveloped reserves which is difficult to quantify.

Would you agree with the proposed method? Following your advise, I will inform PDO senior management on the proposed method for external reserves reporting to the Shell Group.

Best regards.

From:

Thomas

-Original Message

Barendregt, Anton AA SIEP-EPB-GRA

02 January 2001 16:05 Sent:

To: Meissen, Thomas TEM PDO-OQP / UPR

Co: Asibers, Remot RD SIEP-EPB-P; Abri, Said SM POO-CEMS; Antonini, Marous MCJ PDO-CEMS Subject: RE: Proved Reserves Visit - Group Resource Co-ordinator Subject

Thomas,

In response to your query, I fully support the conclusions reached during Remco's visit, as reflected in your note of 24th October. In particular, I support the move towards using expectation estimates for the externally reported proved reserves for mature fields (i.e. for fields with cum.prod. greater than 40% of expectation ultimate recovery). I note that the 40% criterion is not necessarily rigorous; for simple clastic light oil waterdrive reservoirs it could easily be set lower, for heavy oil reservoirs or complex carbonate reservoirs like many of those in Oman, it seems a realistic proposition.

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The externally reported total reserves should be the sum of the developed and the undeveloped reserves estimates.

Trust this clarifies. Good luck with your 2000 submission!

Last but no least, I wish yourself and the PDO PE community a successful, safe and healthy 2001!

Anton Barendregt

-Original Message-

Meijssen, Thomas OQP From:

22 December 2000 14:36 Sent

OM 000207

To: Barendregt. Anton: SIEP-EPB-GRA Cc: Aalbers, Remco: SIEP-EPB-P; Abri, Said CEM3; Antonini, Marcus CEM5 Subject: FW: Proved Reserves Visit - Group Resource Co-ordinator

Anton,

With reference to the visit of Remoo Aalbers to PDO from 23-24 October 2000, we would like to know your opinion with respect to external reporting of proven reserves. During the visit of Aalbers the following was suggested:

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Looking forward to your raply.

Best regards.

Thomas Meijssen
CFDH Reservoir Engineering

OM 000208

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101400005: RE: Reserves issues - meeting with MOG 23/12/2000

Page 1 of 2

From:

Aalbers, Remco RD SIEP-EPB-P

To:

Meijssen, Thomas TEM PDO-OQP / UPR

CC:

Abri, Said SM PDO-CEM3

BCC:

Sent Date:

2001-01-02 10:03:17.000

Received Date:

2001-01-02 10:03:17.000

Subject:

RE: Reserves issues - meeting with MOG 23/12/2000

Attachments:

Thomas, Said

Happy New Year - best wishes for 2001.

Thanks for your Email, sounds like your are making progress. Anton is in today and will revert on the internal proved reserves booking, which he supports.

Hope to see a significant increase in proved reserves for PDO for 2000.

Met vriendelijke groeten / With kind regards.

Remco D. Aalbers

Group Hydrocarbon Resource Coordinator & Senior Planner EPB-P SIEP BV Tel. +31 (0)70 - 377 2001 (fax: 2460)

e-mail: remco.rd.aalbers@sepivbv.shell.com <mailto:remco.rd.aalbers@sepivbv.shell.com>

----Original Message-----

From: Meijssen, Thomas OQP

Sent: Sunday, December 24, 2000 5:16 AM

To: Aalbers, Remco SIEP-EPB-P

Cc: Abri, Said CEM3

Subject: Reserves issues - meeting with MOG 23/12/2000

DEPOSITION EXHIBIT Aalbers F 2/19/07 (22

Remco,

Said Al Abri and myself have had a meeting with the Ministry of Oil and Gas (MOG) on 23/12/2000 on proven reserves.

Proven reserves

* Explained that the proven (developed) reserves of many of PDO's fields are low when compared to the expected (developed) reserves and the maturity of these fields. As a result, the proven (developed) reserves are insufficient to sustain a typical proven forecast.

* This could be due to the low frequency of reserves bookings (typically every 5 years, but sometimes even every 10 years) and ongoing production and maturation of the reserves base.

* In addition to the reserves bookings, the proven (developed) reserves per reservoir are currently only updated annually when the production exceeded the proven (developed) recovery, thus giving negative proven (developed) reserves.

* Indicated to MOG the technical need to more regularly updating the proven (developed)

reserves. MOG supported this.

* Agreed to review PDO's resource base (including the 2000 reserves bookings) and identify which fields have low proven (developed) reserves. Check with the asset teams what is the reason for the low proven (developed) reserves. If the proven (developed) reserves are too low, then identify what technical work needs to be done to update the proven (developed) reserves. If this can be done by simple decline curve analysis or using a low NFA forecast, then we can update the proven (developed) reserves for the 1/1/2001 ARPR. If more technical work is required to substantiate the proven (developed) reserves, then this should be done during 2001 for inclusion in the 1/1/2002 ARPR.

We did not discuss external reporting of proven (developed) reserves, which we like to conclude with you, Anton Barendregt and our planning department.

Best regards,

Thomas