in association with

NIGERIA EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE

PROCESS AUDIT 1999-2004

PROCESSES FOR CAPITAL AND OPERATING EXPENDITURE

Presented to
The National Stakeholder Working Group

by

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in association with

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The report and all appendices relating to the report are intended for the use of the National Stakeholder Working Group of the NEITI for the purpose of that initiative and are not to be relied upon by other parties.

Acronyms

AENR	Agip Energy and Natural Resources Nigeria Limited
AFG	Accountant General of the Federation
AGO	Diesel oil
ALSCON	Aluminium Smelting Company of Nigeria
ASCL	Ajaokuta Steel Company Limited
BPSD	Barrels per stream day
BS&W	Base Sediments & Water
CBN	Central Bank of Nigeria
CIT	Company Income Tax
COMD	Crude Oil Marketing Division of NNPC
CPDD	Corporate Planning & Development Division
CTT	Custody Transferred Terminal
DPK	Kerosene
DPR	Department of Petroleum Resources
DSCL	Delta Steel Company Limited
ECOWAS	Economic Community Of West African States
FAAC	Federation Accounts Allocation Committee
FCCU	Fluid Catalytic Cracking Unit
FCT	Federal Capital Territory
FIRS	Federal Inland Revenue Service
GMD	Group Managing Director (of NNPC)
GED F&A	Group executive Director Finance & Administration (of NNPC)
GGM	Group General Manager (of NNPC)
KRPC	Kaduna Refininy and Petrochemical Company
LNG	Liquefied Natural Gas
LPFO	Low pour fuel oil
NAE	Nigeria Agip Exploration Ltd
NAFCON	National Fertiliser Company of Nigeria
NAOC	Nigerian Agip Oil Corporation
NAPIMS	National Petroleum Investment Management Services
NEPA	Nigerian Electric Power Authority
NGC	Nigerian Gas Company
NGL	Non Gas Liquids
NLNG	Nigeria LNG Ltd
NNPC	Nigerian National Petroleum Corporation
NPDC	Nigerian Petroleum Development Company
OAGF	Office of the Accountant General of the Federation
OML	Oil Mining Lease
OPL	Oil Prospecting License
OPTS	Oil Producers' Trade Group (of the Lagos Chamber of Commerce)
PAYE	Pay as you earn
PHRC	Port Harcourt Refinery
PMS	Petroleum motor spirit (petrol)
PPMC	Pipeline and Products Marketing Co Ltd
PPQC	Production Programming and Quality Control
PPT	Petroleum Profits Tax
RVSG	Rivers State Government
SPDC	Shell Petroleum Development Corporation
SWIFT	Society for Worldwide Interbank Financial Transactions
VAT	Value Added Tax
WHT	Withholding Tax
WRPC	Warri Refinery Petrochemicals Company

CONTENTS

1 EXECUTIVE SUMMARY

This report covers both the third and eighth deliverables of the Process Audit:

Financial Decision Making Analysis; which documents and assesses how financial decisions are made with regard to capital investment expenditures and how operating expenditures are managed in upstream companies and Government entities, with particular reference to the use of computer models and systems.

Operating and Capital Expenditure (Including Procurement of Goods and Services), which presents concise descriptions of key elements in the process of capital and operating expenditure illustrating where existing procedures and controls are not in line with the best in industry and to report discrepancies where they are encountered. This deliverable is also to determine whether the FGN are foregoing any benefits because of procedures and how these can be rectified.

This report integrates the findings and recommendations of these two related requirements into a coherent and logical whole.

A questionnaire was developed and piloted in July 2005 with two companies. Responses were received from 13 companies, NNPC NAPIMS and NPDC. Many of the responses are cursory and some are incomplete. Further clarification was sought and interviews held with a selection of respondents to seek to establish the effectiveness and efficiency of the processes described.

From the written responses, it is clear that those operating companies run by the large IOCs use processes that are consistent both with their international practices and the requirements of the JOA/PSC. These companies generally have adequate processes, and checks and balances in place, to be able to manage their businesses competently, with regard to justifying capital expenditure and setting and managing operating costs.

We note there is a trend among the IOCs to follow broadly similar processes for authorising capital expenditure. This is a pragmatic trend since they are working together in many different partnerships across the World, and hence have many opportunities to share good practices and learn from each other. These processes have been mapped in this report. It is recommended that all companies adopt a similar process to progress opportunities from inception through to execution and production in a staged or gated process to improve execution scheduling and budget control.

Some of the smaller companies were reluctant to reveal their processes. This may suggest that they are not as rigorously developed as those in the larger International Oil Companies. Some recommendations for improvement have been made in individual cases.

The use of computer systems is largely confined to cost estimating and reservoir engineering models used to generate costs and production profiles as input to proprietary economic models for capital investment appraisal and usually SAP or JD Edwards and other models for the management and control of capital and operating expenditure. This level of IT support in this area of the business is considered adequate.

NNPC NAPIMS performs dual roles of co-venturer in the Joint Ventures (JVs) as well as ‘supervisor’ of the JVs and PSCs. As a co-venturer it fully participates in the JV Technical Committee (TECOM) meetings bringing benchmarked costs and operating practices from other companies to the individual JV partner, a privileged role as individual companies do not have access to other companies’ operations. However, it is unclear whether as a co-venturer it undertakes truly independent technical assessments or economic evaluations of potential opportunities, or relies mainly on the JV/PSC Operators to provide the information that it reviews. An independent assessment of the reasonableness of

technical proposals, capital costs and operating expenditure within NNPC NAPIMS would contribute to a better dialogue and understanding with the Operators and increase capability within NNPC NAPIMS.

The supervisory role of NNPC NAPIMS potentially conflicts with the JV partnership role and should be carried out by a separate Government regulating agency.

NNPC NAPIMS requires a methodology to rank potential opportunities or projects in terms of profitability indicators or National Aspirations criteria even though NNPC funding tends to be the main constraint in permitting company programmes being fully endorsed and executed. NNPC NAPIMS should establish criteria against which it can prioritise the nature and pace of developments proposed by the JVs. NNPC NAPIMS is the entity that manages the FGN upstream investment portfolio. In this role, it has a portfolio of projects to manage and is frequently constrained by Government funding. Yet it has no portfolio management system in place.

NNPC NAPIMS should introduce a project ranking and a project performance measurement and benchmarking system supported by suitably qualified staff, technology, procedures and computer systems to be able to manage their portfolio of projects to meet their objectives.

Various methods are in place in the companies to try to hold costs down. NNPC NAPIMS has the benefit of reviewing all companies costs and is able to benchmark these costs and challenge companies through the TECOM process. The general aim has been to develop a cost/benefit culture throughout each company.

Increases in capital and operating expenditure are expected in 2006 and 2007. There is concern whether this ambitious JV programme of new developments, to meet the National Aspirations, can be managed by NNPC NAPIMS with their limited resources and delegated authority levels. Unless changes are made within NNPC NAPIMS, this JV programme will start to slip.

The JOA requires that the annual programme and budget should be approved by 31st December. Delay in approval is typical. Consequently, progress on project implementation may be slowing down and contracts are not being signed until approvals are in place. If project schedules are delayed costs inevitably increase, production is delayed and loss of value to all parties results. To achieve a timely approval of the annual programme and budget, the annual programme and budget is finally approved at the OPCOM level well before 31st December without further reference to a higher authority. To achieve this, the senior representative of each company and NNPC NAPIMS on OPCOM must be of a sufficiently senior level or with delegated authority to be able to approve the annual work programme and budget. We recognise the realities of the Government budgetary system and appreciate the final NNPC NAPIMS share of the budget may not be known until some months later after the National assembly approves the budget for the President's assent. Should NNPC NAPIMS share of the budget not be eventually fully approved then any shortfall should be alternatively funded. For clarity we are suggesting that NNPC NAPIMS' share of OPCOM's approved budget could be funded at two levels, into:

- element covered by Government budget; and
- element covered by Alternative Funding.

This process is already being followed informally. We suggest that it should be formalised by being specifically incorporated into the JOA and enable NNPC NAPIMS and OPCOM's budgetary empowerment to be fully underpinned.

Alternatively, the National Assembly could allocate NNPC a budget each year, as a top down process, and give NNPC authority and independence to manage their programme within that budget. NNPC would be responsible to FGN to meet targets and goals and be fully accountable to the FGN each year. NNPC NAPIMS would be wholly responsible and accountable for allocating/distributing its share of the budget to the various joint ventures.

Most large projects are constructed over more than one year and the total budget needs to be approved before start of execution. The Government one-year budget approval cycle is inconsistent with this. There needs to be some approval process in place for NNPC NAPIMS to approve project expenditure over its construction phase so that the project is not subjected to delays waiting for annual approvals and hence potential loss of value. Giving NNPC more independence, as suggested above, would go some way to meeting this objective.

The contracting process, from advertisement to award of contract, can take 18 to 24 months. Award of contracts needs to be accelerated and this will occur if NNPC NAPIMS does not require approval at every level. NNPC has recognised that delay is a problem and plan to introduce a Joint Qualification System (JQS) with an electronic market. NNPC NAPIMS representatives are present at every stage of the above process. If these representatives are delegated the correct level of authority then higher internal approvals within NNPC NAPIMS will be unnecessary, the process will be more transparent and contract awards will be accelerated. NNPC NAPIMS representatives involved in the contract award process need to be delegated an appropriate level of authority to approve contract award.

Contracts should be awarded to the contractor offering the best total value, with proper consideration of quality, service, price, delivery and operating costs to the benefit of the Joint Operations, as stated in the JOA, rather than always to the lowest bidder. This may require more scrutiny at the pre-qualification and technical level but then delays should be reduced by eliminating non-performing contractors.

NNPC NAPIMS sees itself as Investment Managers rather than as partners in a joint venture. It is unclear whether the potential technology transfer is being recognised by NNPC NAPIMS or can be used by NNPC NAPIMS in its current role. NPDC, another NNPC company, would benefit from this technology transfer as it is a small operator. It is recommended that NNPC NAPIMS reviews its current role and see whether it is benefiting fully in its role as a JV partner.

To enable progress to be continuously made and value-for-money to improve, Business, Technical, Cost and Schedule data from operators should be structured in a manner that NNPC NAPIMS can utilise the information gathered to measure and challenge industry performance with realistic metrics.

The upstream industry should evolve a consistent and structured process for establishing and reporting performance of capital, operating and decommissioning expenditure of upstream developments and projects. In line with the focus of NNPC NAPIMS to restructure control processes, there is need for a Performance Measurement System (PMS) that allows NNPC NAPIMS to undertake performance measurement and benchmarking both at the industry or project level. This should be mainstreamed within project management processes and not relegated as an occasional special exercise.

2 INTRODUCTION AND SCOPE OF THIS REPORT

The Process Audit required:

Financial Decision-Making Analysis

The documentation and assessment of the current processes by which financial decisions are made with regard to:

(a) Capital investment expenditures, with particular reference to the availability and use of computer modelling capacities in NNPC and upstream JV/PSC operators; and

(b) Management of operating expenditures, with particular reference to the suitability of management information systems in aiding opex management.

Operating and Capital Expenditure (Including Procurement of Goods & Services)

- Concise descriptions, and graphic representation of key elements in the process of capital and operating expenditure illustrating where existing procedures and controls are not in line with the best in industry and report discrepancies where they are encountered.
- Determination of whether the FGN are foregoing benefits because of procedures (or implementations thereof) which are not in line with the best in industry.
- Recommendations as to how any deficiencies in the process of capital/operating expenditure approval and spending can be rectified.
- Proposed approaches to implementation plan including aspects of a legal, training and/or IT perspective.

Although the first deliverable is focused on the availability of computer models, it is necessary, in the first instance, to understand the capital investment decision making processes in a company.

The focus of the latter deliverable is on the management and control of ongoing operating expenditure, especially the use of information systems to support this. However an understanding of the process of how the operating cost budgets are justified should help control operating costs subsequently. Where cost overruns occur a clear policy on controlling them or using offsets should be in place.

As a consequence it was more rational to proceed to identify first the key elements of the management and decision-making processes and systems for both capital and operating expenditures and to determine whether these followed good practice. The other deliverables were then addressed on the basis of these findings. This report therefore integrates the findings and recommendations of these two related requirements into a coherent and logical whole.

The report is structured such that the review, comments and recommendations for each part of these deliverables are contained within each appropriate section.

At Financial Investment Decision points large sums of capital are budgeted, approved and committed to the execution of the project. Before execution it is important that the project has been properly planned and scheduled, that the risks and uncertainties have been mitigated and that the project has full management commitment in order to keep the project within budget and on schedule. The Capital Decision Making Process described herein covers these aspects. The way the annual operating costs are derived is covered by the Operating Cost Setting Process described herein.

Approval and monitoring of the JV capital and operating costs by partners is covered by the JV Budget Approval Process and the JV Budget Monitoring Process. A key part of controlling costs is the process of awarding contracts and procuring goods. This should be governed by documented tendering processes to ensure that the best life cycle value of goods and services are acquired for the project. The Contract Award Process and the Procurement Process cover these aspects.

In summary, in this report the main processes reviewed are:

i Capital Decision Making Process

ii Operating Cost Setting Process

iii Budget Approval Process

iv Budget Monitoring Process

v Contract Award Process

vi Procurement Process

The first two of these processes are internal company procedures and the processes described have been derived from a sample of companies that responded to our questionnaire (see Section 2 below). Clarification of these processes was made during the pilot review, (see Section 2 below) and from follow-up interviews with some companies. The last four processes are governed, for Joint Ventures, by procedures laid out in the Joint Operating Agreement (JOA). Over time these processes have been modified and the processes described are generally the processes that are practiced today.

Each process is described in detail and compared with good practices and appropriate comments are made. Recommendations for improvement are made within the relevant section.

3 METHODOLOGY

3.1 Pilot Review

In July 2005 visits were made to SPDC, representing the NNPC/SPDC/NAOC/Elf joint venture, and CNL, representing the NNPC/CNL joint venture, to discuss with them, individually, their capital investment decision making and operating cost control processes. These meetings were on a pilot review basis in order to better understand these processes and to highlight any problem areas specifically with regard to the interface between the Government and the IOCs.

The purpose was to focus the questions on the real issues in Nigeria in this area in the final questionnaire, which was to be more widely distributed. These meetings were frank and very useful and elicited comprehensive descriptions of their capital decision making processes, including capital cost estimation for screening, study, budget or control and operating cost controls. The NNPC review and approval processes for capital expenditure and operating costs were also addressed in some detail.

A request was made to visit NNPC NAPIMS on a similar basis as to SPDC and CNL but this was unfortunately declined by NNPC NAPIMS owing to their time constraints.

3.2 Questionnaire

As both sets of deliverables concern decisions and control of capital and operating expenditure it was considered expedient to capture all the relevant information in one questionnaire to the covered entities.

3.3 Covered Entities

Initially it was intended that the questionnaire should be sent to a group of 2 international companies, one local company and NPDC. Following the pilot review, see 3 above, it was decided to broaden the scope in order to understand the various processes in use in Nigeria and send the questionnaire to 14 companies and 2 Government entities. The questionnaire was sent electronically to the entities in September 2005. Responses were received from all but one of the companies.

3.4 Follow up reviews

Further clarification was sought and interviews held with a selection of respondents to seek to establish the effectiveness and efficiency of the processes described.

4 NATIONAL ASPIRATIONS

When an international oil company starts to operate in a foreign country its objectives should be aligned with the objectives of that country's Government. This alignment is usually confirmed in the signing of a contract between both parties. However over time the Government objectives may change and the company should respond to those changes, as reasonably as possible, so long as both parties remain within the general terms of the original contract.

An appropriate example is where the Government may wish to put more emphasis in utilising its gas reserves, or may wish to increase its gas reserves, where before there was little incentive to develop or discover gas in the contract. A contract could be modified if necessary, with the agreement of both parties, to provide incentives for a company to align with the Government's objectives. In the specific case of Nigeria JV contracts have been revised a number of times through agreed Memoranda of Understanding (MOU) to provide incentives, for example, for additional investment and reserves additions.

Nigeria has been successful in increasing reserves from about 20 billion barrels to some 33 billion barrels in 2003 over about 10 years while gradually increasing production from about 2 to about 2.3 million b/d over the same period[1]. Based on these past successes the Government put forward a second set of challenging objectives for the industry to aspire to over the next planning period. The main second term National Aspirations[2] are summarised below:

Upstream

- 2003 – 2007 National Objectives
  - 36 billion bbls Reserves and 4 million b/d Production by 2007
  - Maximise sector value
  - Fair share for Nigeria by improving Nigerian capacity and content
- Year 2010 Aspiration
  - 40 billion bbls Reserves and 4.5 million b/d Production

Natural gas

- Develop domestic market and end flaring by 2008
- Transit from an oil industry to an integrated oil and gas industry

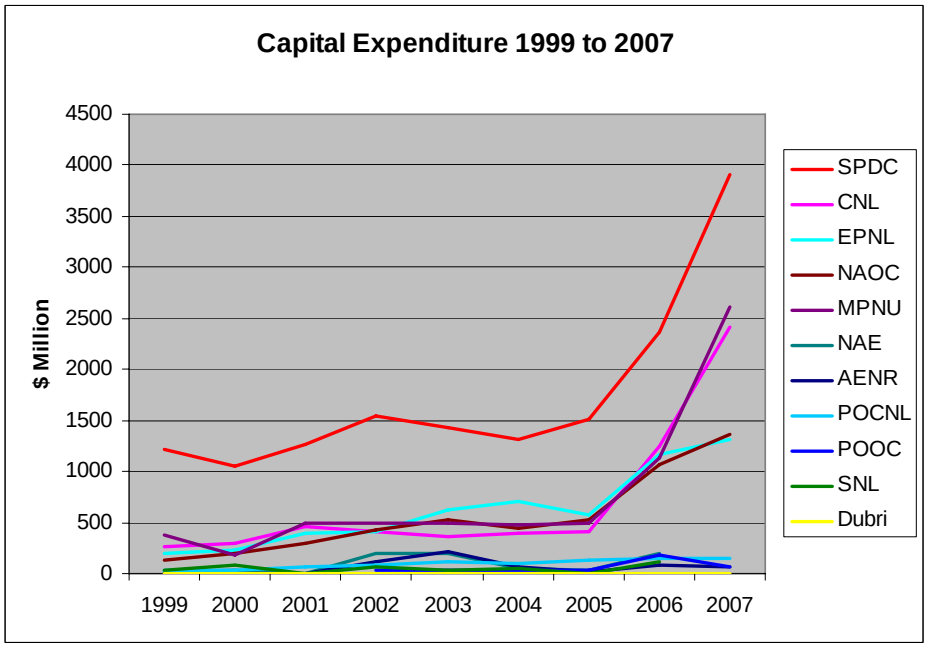
[1] Energy Information Administration, DoE, US Government

All companies operating in Nigeria are aware of these current National Aspirations and some have been allocated a specific share of these targets. Company objectives, especially the JV companies, are generally aligned with these National Aspirations as evidenced by the dramatic increases in capital expenditure forecasted by these companies.

[2] Taken from Nigeria Oil and Gas Industry: Structures for Sustainable Growth presentation

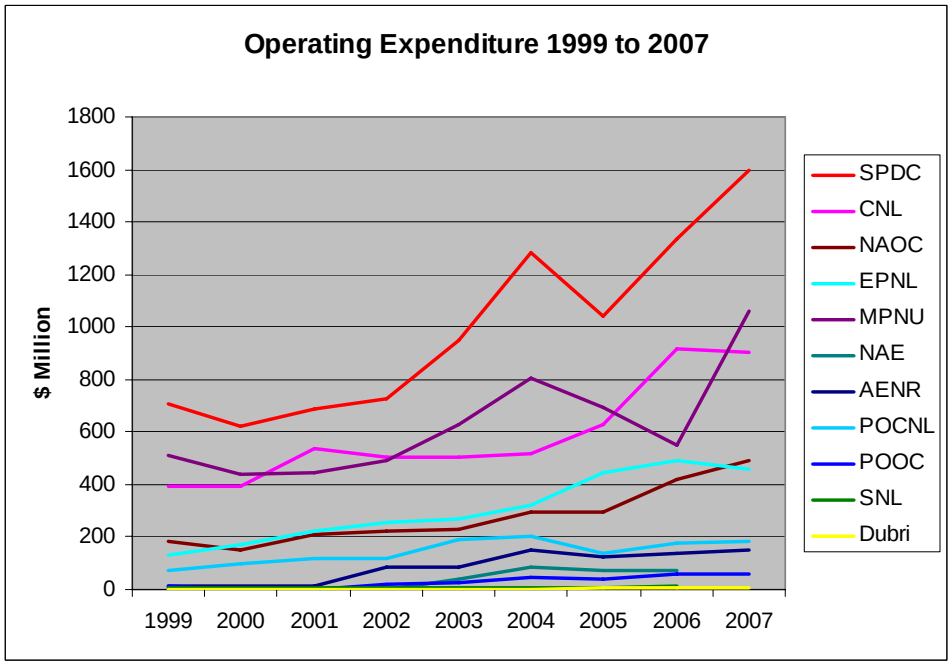
5 EXPENDITURE PROFILES OF THE COVERED ENTITIES

As background to the discussion of processes, we present the following information, provided by the companies, for total capital and total operating expenditure from 1999 to 2007. These Capital Expenditure profiles are shown below in the first graph.

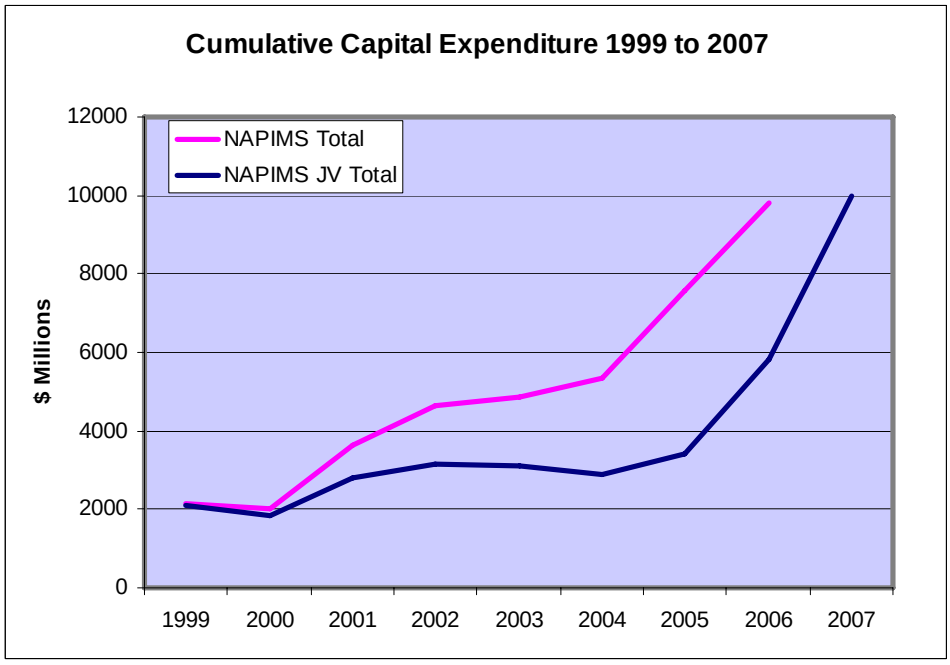


As expected this indicates SPDC has the largest capital expenditure of the covered entities almost twice as much as any other individual company, at least up to 2004. CNL, EPNL, NAOC and MPNU form the medium group all joint venturers, with the remaining companies having the lowest capital expenditure profiles. It is interesting to note the big planned investments over the next couple of years of the JV companies. Most of this increased investment is to meet the challenges of the National Aspirations.

The total operating expenditure for each company would initially be expected to give a similar ranking to that shown in the graph above, especially if the companies have had a long term presence in the Nigeria, and this generally seems to be the case However capital investment on new projects may continue for a number of years before first oil or gas production from the new project starts when operating expenditure in that new project usually also starts, with most so-called operating costs before that date being capitalised. This seems to be the rational explanation for the somewhat unusual operating expenditure profiles shown in the next graph overleaf. However further analysis needs to carried out to fully understand the declines in operating costs recorded by SPDC and CNL in 2005 and over 2005 to 2006 respectively.

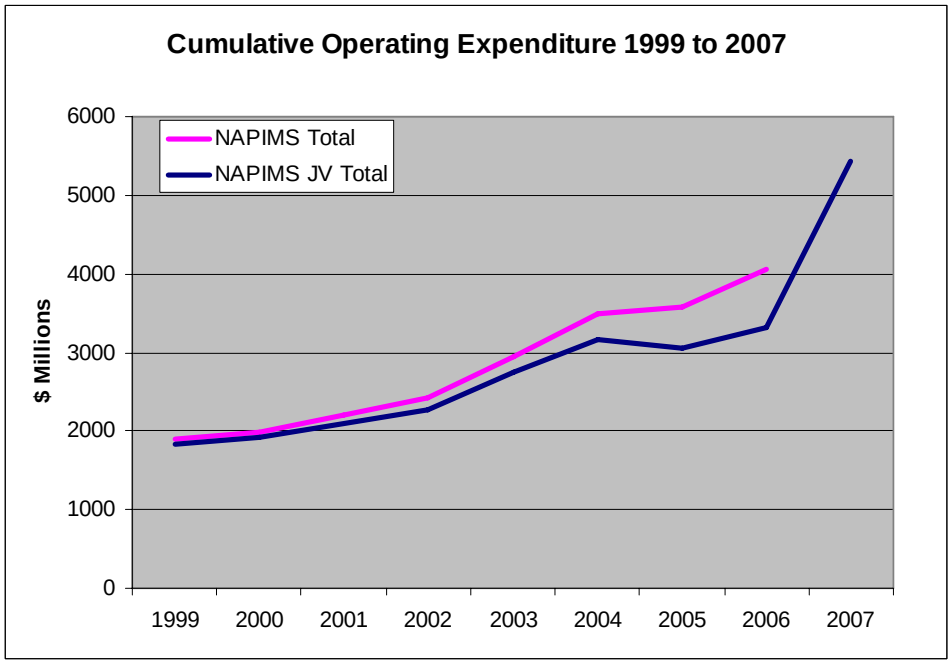


Although the data are incomplete the graph below shows the expected increase of total capital expenditure, as recorded by NNPC NAPIMS, for most JV and PSC companies and for just the JV companies. It is interesting to note that the JV total is increasing from about $ 3 billion in 2004 to nearly $ 10 billion in 2007, an over three times increase in just three years. NNPC NAPIMS share of this total was about $ 1.7 billion in 2004 and will rise to $ 5.7 billion in 2007. This is a dramatic increase in investment over this period and there is a real concern as to whether this increase can be managed by NNPC NAPIMS with



their current resources or whether the Nigerian economy has the capacity to accommodate this increase. It is noted that the budget for 2006 has yet to be approved. Some of the current processes discussed in this interim report and the final report will need to be modified and accelerated otherwise this ambitious programme, presented by the JV companies, will start to slip.

The total operating costs have been generally increasing over the period 1999 to 2007 with some stabilisation over the last 2 years. Operating costs are expected to dramatically increase again next year in the JV operations as new projects come on stream, increasing from about $ 3.3 billion in 2006 to $5.5 billion in 2007.



Further analysis of the data would be required to understand completely the cause of this increase but some of it is evidently due to the planned increases in capital expenditure over the next few years.

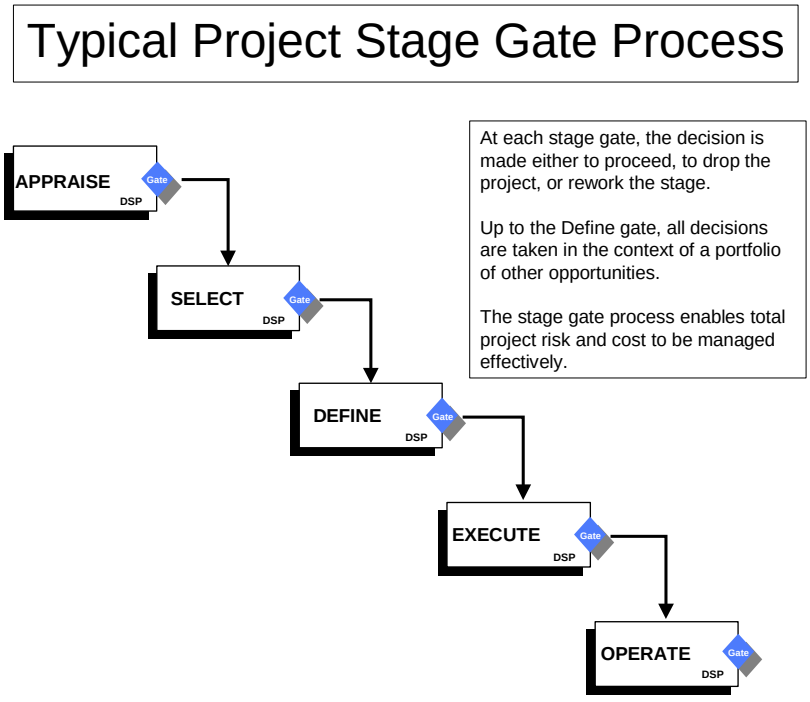
6 CAPITAL INVESTMENT

This section of the report describes the stages of the capital investment process typically in use by the oil and gas industry in Nigeria.

The process of being able to make the correct capital investment decisions needs to be understood and documented. Although the technical and economic considerations are paramount in the viability of a project, a project's potential success will be affected by other factors such as the impact of the project on local communities and the environment. Furthermore the timing of investment decisions may be influenced by factors outside the Nigerian context. All the IOCs hold a portfolio of opportunities across the World and each has its own strategic plan for balancing risk in the development of these opportunities. For developments in Nigeria to progress in a timely fashion, it is essential for NNPC NAPIMS to manage their relationships with the IOCs in such a way to understand these relative priorities.

6.1 The Capital Investment Decision Making Process

In most of the IOCs in Nigeria capital investment decision-making is a staged process. It takes place from inception or initiation of a project through to execution and production. Some companies take this process right through to abandonment.



The desired outcomes of this process are improved decision quality, by selecting and progressing the right opportunities, and improved project outcomes by setting and meeting challenging objectives. The process seeks to cover economic, commercial, organisational and socio-political parameters. A multi-functional work team carries out the work under the guidance of a project leader. The steps in this process are described below, though these may vary to some degree within each company.

6.2 Capital Investment process

Step 1: Identify and Assess Opportunity

1. Statement of requirement for opportunity/project issued by sponsor
2. Define the scope
3. Determine critical success factors
4. Determine who the stakeholders are
5. Define the business objectives
6. Define the key uncertainties and risks
7. Estimate the economic value of the opportunity/project
8. Put forward a good business case
9. Develop an overall plan to move the opportunity forward

Peer review/Decision Review Board/Value Assurance review

Step 2: Generate and select alternatives

1. Carry out a stakeholder analysis
2. Select strategies for evaluation
3. Generate alternative options
4. Define their scope
5. Analyse value or benefits of each alternative
6. Estimate costs of each
7. Define schedule of each
8. Determine uncertainties and risks of each alternative
9. Based on above rank and select best alternative
10. Update the business case put forward in step 1
11. Develop plan for next phase

Peer review/Decision Review Board/Value Assurance review

Step 3: Develop Preferred Alternative

1. Fully define and freeze the scope
2. Begin detailed design
3. Develop implementation/execution plan
4. Refine the business case
5. Develop funding request for execution of the project

Peer review/Decision Review Board/Value Assurance review

Step 4: Execute Project

1. Complete detailed design

2. Execute/implement defined plans
3. Finalize the Business plan
4. Finalize the operating plan

Peer review/Decision Review Board/Value Assurance review

Step 5: Operate and Evaluate

1. Execute the Business plan
2. Operate the asset
3. Monitor and evaluate its performance
4. Identify new opportunities
5. Seek and record lessons learned. (This could be part of a final review by the review team)

6.3 Comments

As shown above one of the key factors of this staged process is for a questioning critical review, by peers, experts or management not associated directly with the project. This takes place at the end of each step to ensure all the information is in place before proceeding to the next step. If this review is unsatisfactory the team is required to gather more information before being reviewed again. The review team can also hold the project or even stop the project at that point if the project is in some way unsatisfactory, such as too low value or too high a risk.

If all the information is in place and the project looks attractive then the review team can recommend going ahead to the next phase usually accompanied with a budget sufficient to cover the next phase of the opportunity/project. The review teams often incorporate venture partners, including NNPC NAPIMS, particularly at the end of steps 2, 3 and 4. Partners and NNPC NAPIMS are also involved at other times during this process especially when funding is required for each step. In parallel with this, reviews at TECOM level will be taking place so that non-operators will be fully aware of progress being made within the operating company.

Although the structured process above is a logical process for progressing ideas through to execution it is a relatively new process being implemented in companies over the last 5 to 10 years. Most of the effort is put into the first three phases, which has been termed Front End Loading (FEL). FEL is the practice of taking sufficient time and employing enough competent people in the early phases of the project properly to assess the opportunity, identify its value drivers, identify risks and uncertainties, align objectives with all the major stakeholders and achieve high quality front end engineering deliverables, such as the Field Development plan or the Project Execution Plan, prior to expenditure on the project execution.

The whole thrust of the process is aimed at achieving the focus on the front end thinking and planning that will enable a successful execution. For this to occur it is essential that adequate funds are available for this work prior to the Final Investment Decision (FID). Dependent on the nature of the opportunity, some 10 to 20% of total project engineering expenditure can be expected to take place ahead of FID in order to prepare for a successful execution outcome. Since its introduction the main benefits of this process have been better schedule and budget control at the execution stage. One company that

adopted this process in 1999 has reported improvements of 10 to 15% in both these areas on 5 projects carried out since adoption.

NNPC NAPIMS states that its primary role is that of Investment Managers. Like the IOCs they need to take a global view of their portfolio. Funding is the biggest constraint faced by NNPC NAPIMS. NNPC NAPIMS therefore needs to prioritise new projects so that the best get approval and the worst are deferred or are dropped or get alternative funding (AF). NNPC NAPIMS does not currently have a project ranking process or tools or criteria to judge what determines the best or worst projects.

If a ranking process is to be created in NNPC NAPIMS then it could be based on just project economic parameters (such as IRR, NPV, PIR, discounted cost/bbl, etc) or a combination of economic and other parameters, such as those leading to the achievement of the National Aspirations. Different parameters could be given a score which would then be weighted to arrive at a weighted score that, in turn, would then be used to rank the project. Each project would have a phased annual cost. An annual cumulative cost profile of the ranked projects would then indicate which new projects could be funded and which would not.

If OPEC quotas were a constraint then a similar process could be employed to select those projects that would give the best value per barrel over the following years. This can be a complicated process as first call on annual funds will be for those projects that have already been given approval in previous years.

Funds are also required for maintaining existing facilities, for health safety and the environmental projects and for infrastructure projects. Any funds left over after these projects have been ranked and accommodated will then be available for the new projects.

The ranking process can be complex and needs to be supported by trained staff, technology and computer models. This may be a challenge for NNPC NAPIMS but the reward would be a better NNPC NAPIMS business plan and better control and understanding of their portfolio of projects.

6.4 Recommendations

All companies should adopt a well documented staged process to progress opportunities from inception through to execution and production to improve execution scheduling and budget control.

NNPC NAPIMS should consider introducing a project ranking system, as described above, supported by suitably qualified staff, technology, procedures and computer systems to be able to manage their project portfolio.

7 REVIEW OF CAPITAL INVESTMENT PROCESSES

This section includes a detailed review of the responses provided by the Companies to questions concerning their capital investment processes. Based on their responses to the questionnaire, Companies have then been appraised against what the consultants believe to be international good practice and highlighted by italic text.

It is not possible to completely understand the way a company operates in practice from such a completed questionnaire but it can highlight areas of concern that may need to be addressed. Follow up interviews have been conducted with a selection of companies to clarify certain points. Comments are made based on the currently available information to the auditors.

7.1 Mission and Objectives

This concerns the steps leading up to an opportunity becoming a justifiable and executable project. Even before an opportunity can be identified a company's raison d'être has to be clarified. So at the highest level there needs to be an understanding of what the company is trying to achieve, or what it is there for, and this is often succinctly summarised in a company's mission statement. For example is the company in business to find oil and gas reserves, or to develop existing reserves, or to produce hydrocarbons at a particular daily rate, or to achieve a certain return for investors, etc, etc. If a company's mission is clear then financial decisions can be justified in support of that mission. Company objectives flow from that mission which can then be cascaded throughout a company's organisation.

The auditors consider the following paragraph as good practice so far as a company's mission and objectives should be defined.

INTERNATIONAL GOOD PRACTICE - *A company (i.e. the local company which may be a subsidiary of a major IOC) should develop its own mission and objectives statements but should take note of the host Government's aspirations, so that the two entities (especially where the Government entity is a company's joint venturer) are aligned and have generally common goals and aspirations. If a company has a clear mission and a set of objectives then capital investment decisions can be made in support of those objectives. The mission statement and objectives should be meaningful, measurable, relevant to the local operating area, clearly documented and cascaded to relevant staff and co-venturers.*

The first 6 questions in Section 1 of the questionnaire, attempt to establish whether this is the case in each company.

7.1.1 Review

Apart from some confusion over vision and mission statements in the returns it appears that all the JV companies and NPDC have some quantifiable objectives in being in Nigeria, which are aligned with the second term National Aspirations. This was not always clear from the returns but became clear at the interview sessions. Just based on the written returns POOC's are somewhat limited to being "efficient". POCNL and Dubri have one main clear, non-quantifiable, objective. The three Agip companies appear to hide in the shadow of ENI and would perhaps benefit in clarifying, through mission and objectives, the reason for their specific presences in Nigeria. SNL also has apparently not developed its own local objectives. Only SPDC, NPDC, SNL, EPNL and Agip (ENI)

objectives allude to provide a reasonable return to investors that one would have thought was the main reason for operating in the upstream business in Nigeria.

All staff in the companies with the exception of Dubri, according to the returns, should be aware of their company's mission and objectives.

NNPC NAPIMS states that its mission is "To enhance the benefits accruing to the Federation from its investments in the upstream petroleum industry through effective cost control and supervision of Joint Venture (JV) and Production Sharing Contracts (PSC)." As NNPC NAPIMS represents NNPC as a joint venturer in the six JVs then its mission to get the most out of its investments in the upstream is a tangible and timeless one. However to try and achieve this in a supervisory role conflicts with NNPC NAPIMS role as a joint venturer. For example, if there is a dispute who does NNPC NAPIMS side with, the other joint venturers or with the Government (or its agent)?

NNPC NAPIMS sees itself as a corporate services unit, or asset manager, or cost centre compared with NPDC, which it sees as a profit centre. It considers it would need more empowerment to become a profit centre. It also sees no conflict of interest in its two roles and considers the Department of Petroleum Resources (DPR) to be the regulator. However it would support more independence.

NNPC NAPIMS objectives are directly aligned with the National Aspirations.

7.1.2 Recommendations

It is recommended that all companies develop a clear mission statement supported by quantifiable objectives aligned, as far as possible, with the second term National Aspirations.

It is recommended that NNPC NAPIMS role as a joint venture partner be separated from its role as a supervisor of the contract. As a non-operating joint venture partner it should monitor the JV performance in implementing programmes within budget.

7.2 Cost Estimating

During the pilot review in July 2005 CNL provided a detailed description of how they estimate capital costs during various stages of the maturation of a project. The process is similar to cost estimating procedures used by other IOCs. In the capital decision making process it is important to understand how capital costs of projects are derived in the IOCs and the range of uncertainty associated with these estimated costs.

Operating costs are usually generated at the same time and in the early stages of the maturation of a project and are often just a function of the capital cost estimates, such as a percentage of the accumulated costs or a cost per barrel of production. As the project matures the operating costs will become more specifically defined. The estimating process is described below as being fairly typical of the way capital costs are estimated in the oil and gas sector.

The first steps in the preparation of a capital cost estimate are to define the nature and key parameters of the project or development being selected for consideration and then break down the project to a level of detail appropriate for the type of estimate required.

A field development might include the following Construction Facilities:

- Producing facilities – Onshore/Offshore - Subsea
- Substructures – Fixed and Floating
- Pipelines – Onshore and Offshore
- Terminals

These Construction Facilities are then further broken down into discrete activities or Project Functions. Project Functions generally adopted are:

- Engineering and design
- Procurement
- Construction/Fabrication
- Haulage and installation
- Hook-up and commissioning
- Project Management
- Insurance and Certification
- Drilling and Completion

The engineering or physical quantities of each Construction Facility are then derived taking account of such parameters as the project reservoir plateau rate for oil, gas and water, reservoir depth and area, location, terrain and distance from export market and so on.

The cost of each Project Function is then estimated by application of unit cost rates to the derived engineering quantities for each facility. For example the engineering quantity for an offshore platform may be so many tonnes of steel and the unit cost will be so many $/tonne of steel. The unit cost rates are continually updated with actual cost data as they become available.

Appropriate allowances and contingencies are added to the individual estimates at project function level (see below).

The components of the cost estimate are then phased to obtain an expenditure profile which reflects the project schedule.

The complete estimate from the definition of scope, through the derivation of quantities and the application of unit cost rates are then collated and recorded to obtain the final base estimated cost of the project.

The steps enumerated above are required in all estimates. However, the reason for the estimate and the accuracy required will determine the degree of definition and the extent to which the project needs to be broken down into different entities. The type of estimate performed should therefore be commensurate with the purpose for which it was prepared.

The general practice is then to:

- select an **estimate type** based on the purpose of the estimate and the accuracy required.

- adopt a predetermined **breakdown structure** for the selected estimate type
- follow a consistent **estimating method** across the complete breakdown structure

These three steps are discussed in further detail below:

Estimate Levels and their accuracy:

An indication of the accuracy which is assigned to the cost figures are manifested in four classified levels: SCREENING, STUDY, BUDGET or CONTROL. The accuracy associated with each level is a function of the level of detail of the scope definition and the variance in both the derived quantities and the unit cost rates selected for the estimate.

Breakdown Structure:

The next step is to select the project entities (phases) from which to derive the construction hardware (equipment/facilities). As the scope of the project matures then the number of individual components cost estimated will increase.

Estimating Method:

The estimating method is the same for all classified levels but there will be fewer components cost estimated for SCREENING than there will be for BUDGET so the cost estimate will be less accurate for screening than it will be for budgeting purposes.

Contingencies

There is a tendency for the scope, of the unique type of projects executed by Exploration and Production, to grow. As a consequence, typically greater quantities are required than estimated in the base estimate. To cater for this growth of scope, contingencies and allowances are added at various points in the estimating process. Obviously, a more detailed definition of scope not only improves the accuracy of the estimate but also reduces the levels of contingency to be applied. Allowances and contingencies are assigned in the estimating process as follows:

- **Activity Allowances:**

  Activity allowances are firstly added by the estimator to the various cost items to account for weight growth, weather downtime, cut and waste, and other such known uncertainties, (or known unknowns) which have a high probability of occurring.

- **Contingency:**

  Contingency is added to the base estimate to allow for incomplete project definition, estimate omissions, exchange rate uncertainties (but not for major scope changes, which would require a new project estimate). Current practice is to add a contingency that is considered reasonable to cover the unknown uncertainties. For the four classified levels these contingencies are typically +20%,

+15%, +10% and +5% of the base estimate and have been generally validated against historical data.

The resulting estimate is named the 50/50 estimate. By definition the project has an equal chance of over running as of under running the 50/50 estimate within its accuracy ranges. Typically these

Screening (Level 1) estimates are accurate to within ± 40%,

Study (Level 2) estimates are accurate to within ± 25%,

Budget (Level 3) estimates are accurate to within ± 15%, and

Control (Level 4) estimates are accurate to within ± 10%.

- **Overrun allowance**

  An allowance is added to the 50/50 estimate to allow for the risk of over running this estimate. A project estimated to cost for instance US$200 million with an accuracy of **±**25% (Level 2) may require actual expenditure of US$250 million. This is the accuracy range that could be taken as the potential monetary exposure of the project. Therefore, by adding a value representative of the accuracy range/overrun allowance to the 50/50 estimate, an estimate is arrived at with only a 10% probability of being exceeded by the actual cost. This estimate is named a "90/10 estimate" and could be considered a "minimum risk" estimate. This estimate may be used for the setting of budget levels or sensitivity analysis of field development economics.

- **Cost Phasing and Escalation**

  Once the project estimate of the required confidence level has been established, the expenditure over time can be determined. This expenditure profile should reflect not only the durations associated with design, procurement, construction, etc of the individual construction items but also the various lead-times as indicated by the overall project schedule. The above estimates are in today's money and they may need to be further inflated over time, for general inflation or perceived future market conditions (supply and demand of rigs for example). The sum of these phased expenditures is then the budget estimate in Money-of-the-Day.

The above process of cost estimating is generally followed by the larger IOCs. It is unclear what process the smaller companies follow.

7.3 Capital Investment Decision Process

The pilot visits to SPDC and CNL in July 2005 resulted in each company providing a detailed explanation of their respective capital investment decision making processes. Perhaps not surprisingly for IOCs, SPDC's and CNL's methodologies were logical, well formulated and very similar. For example they both have a five-stage process in progressing projects from an initial opportunity to full production with checkpoints at the end of each stage. In SPDC Value Assurance Reviews (VARs) are carried out towards the end of each step to ensure deliverables for that step have been covered. These

checkpoints are clear decision points as to whether the project should proceed to the next stage or whether further information needs to be acquired for the current stage before moving to the next stage. There is also the option to exit or stop the project.

In SPDC the whole process, from identification to operation, is called the Opportunity Realisation Process (ORP) and in CNL this is called the Chevron Project Development and Execution Process (CPDEP). One company that implemented the process in 1999 has recorded that budget and schedules of projects improved by 10% to15% over projects that were implemented prior to introducing this process.

Joint Venture Partners approval process involves three hierarchical support/approval committees. These committees seek to understand, challenge, support, approve and monitor the programme, budget and expenditure. These committees are:

Level 1: Development Committee (DEVCOM) and Exploration Committee (EXCOM)

Level 2: Technical Committee (TECOM)

Level 3: Operating Committee (OPCOM)

INTERNATIONAL GOOD PRACTICE – *The documented implementation and approval process should address the full life cycle of the opportunity in a series of progressive steps. Within each step documented objectives need to be reached, risks and uncertainties (such as critical success factors) need to be addressed or mitigated or at least identified, and the scope of the opportunity or project at that stage needs to be formulated. A formal questioning peers/experts (external to the team) review at the end of each step should be made to arrive at a decision as to whether the opportunity or project should proceed to the next step or whether further work needs to be done. A decision to progress is usually confirmed by further budget approval for the next step. The ORP and CPDEP above each have 5 similar phases or stages, viz Identify and Assess, Select Alternative, Define or Develop Preferred Alternative, Execute and finally Operate. Within certain stages opportunities should be geologically, technically and economically evaluated, compared by screening and ranking, based on internal company guidelines, and alternative developments considered in order to economically optimise the project. All stakeholders should have been involved by the time final investment decision is made.*

Questions 7 to15 in Section 1 of the questionnaire, were designed to see whether other companies had similar well documented capital investment decision making processes, that phases were approved by relevant staff before moving on to the next phase, if and how potential investments are ranked/screened and whether all stakeholders (including local communities) are involved in the investment decision and subsequent implementation of the project.

7.3.1 Review

Making the right investment decisions is key for any company to survive in the long term. It was therefore not surprising to learn that CNL, SPDC, MPNU, EPNL and the Agip companies each have a comprehensive capital investment decision making process in place with various checks and balances at each stage of the process. EPNL's process goes through to abandonment. CPL appears to have a process in place but not as rigorous as the IOCs. SNL, POCNL and Dubri appear to have some process in place but were reluctant to give any details. POOC and NPDC do not appear to have a structured or well documented process based on the information provided.

As a non-operator NNPC NAPIMS relies on the Operator to provide it with investment proposals which it subsequently reviews at Technical Committee meetings (TECOMs) or Operating Committee meetings (OPCOM). Some independent analysis is carried out within NNPC NAPIMS but there appears to be no formal independent process in-house along the lines of SPDC's ORP or CNL's CPDEP. It appears to challenge costs in detail at TECOMs based on benchmarking with other companies but, by concentrating on the details, can miss the opportunities for improvements in development efficiencies based on the bigger picture. The JV Operator is normally expected to carry out most of the work in maturing an opportunity, but specialists in the co-venturers often provide support or alternative proposals to the Operator having carried out studies independently in-house. It is evident that NNPC NAPIMS may not have this capability or have sufficient resources in-house to do this. As a result of a recent office fire conditions in temporary accommodation are apparently very cramped which is not conducive for an efficient operation.

Revenue generating projects within the IOCs are generally screened and subsequently ranked on a variety of economic parameters. In SPDC and SNL other non-financial indicators are used as well. Other companies ranged from specific ROR (rate of return) criteria to less specific "availability of financing" criteria.

The screening and ranking of projects must be left to the individual companies and based on their own internal commercial assumptions of future oil and gas prices, discount rates, inflation rates and their own profitability indicators. This can obviously lead, in some cases, to joint venture partners disagreeing on the economic viability of a project. In the more extreme cases this may lead to a company pursuing a project on a sole risk basis. The JOA Article 8 provides a process for handling this situation.

In a joint venture of several companies it is often the case that a set of economic screening parameters and commercial assumptions are agreed as a way of presenting profitability indicators of an opportunity or project to all joint venturers without necessarily representing any one of them. NNPC NAPIMS appears to rank projects on how closely they align with National Aspirations, according to its returns. It is unclear what internal commercial assumptions it uses but its screening criteria appears to be based on an IRR. The main constraint to project implementation, according to the returns and interviews, is Government funding or equipment availability, such as rigs. As funding is a major constraint for NNPC NAPIMS then screening and ranking of projects should be based on profitability indicators (such as NPV, PIR or IRR), for them as well as the other companies, in addition to the projects contributions to the National Aspirations.

All JV IOCs actively engage joint venturers and the wider stakeholders at most stages of project implementation which should ensure smooth project implementation. POOC, POCNL, SNL, NPDC, CPL and Dubri do not seem to recognise wider stakeholders according to the returns. NNPC NAPIMS delegates involvement of the wider stakeholders to other Government organisations. Today it is acknowledged that the success of oil and gas projects is critically dependent on the support and engagement of the local communities often through the use of Memoranda of Understanding (MOUs). The MOUs promise contributions to the local communities for such things as schools, clinics and other infrastructure. This engagement must be carefully planned and implemented to ensure all members of the community benefit as much as possible. The cost of this can be significant with one company reportedly spending $80 million in this area alone but ultimately this gives the companies a licence to operate.

7.3.2 Recommendations

It is recommended that all companies/operators have a well documented, staged process for evaluating opportunities from identification through to operation where each distinct stage is independently peer reviewed and approved, to ensure all options have been considered, all risks and uncertainties have been addressed, before progressing to the subsequent step.

It is recommended that NNPC NAPIMS fulfils its role as a joint venture partner by having the expert capability and resources in-house to analyse independently proposals put forward by the JV Operators.

It is recommended that NNPC NAPIMS draws up a set of screening and ranking criteria, together with future commercial assumptions (like oil price, inflation) so that if there is a constraint in a particular area, such as funding or OPEC production limits, then project proposals can be ranked against these criteria in order to maximise the benefit to the FGN.

7.4 Computer Support

INTERNATIONAL GOOD PRACTICE - *Computer models/systems should support suitably qualified personnel in making the correct analyses especially where the volume of data is large or where the calculations are complex, such as in some production sharing contracts. Management should be confident of the accuracy of the analyses presented, at various stages of the process, in order to make the correct capital investment decisions.*

Questions 16 to 22 in section 1 of the questionnaire, were designed to ascertain whether computer models were being used, what they were and what they did, who provided the data and evaluated the output, and how effective they were. It should be noted that computer modelling is used extensively in the upstream oil and gas sector in subsurface applications, such as in seismic processing and interpretation and reservoir modelling. Subsurface modelling, however, is outside the remit of this audit. Surface modelling applications could be expected for cost estimating and production forecasting for use as input to economic models.

7.4.1 Review

No computer model is used in POOC to assist in the above process. SNL uses SAP (the accounting package) but does not specifically mention any other models or any other details about their computer software. EPNL uses a reservoir model for production forecasting, a process model for optimising process facilities, an integrated Production model for optimising well behaviour and an economics model. All these models appear to be proprietary.

The other companies use similar proprietary models or, in CNL's and CPL's cases, the economic model PEEP which is commercially available but adapted for local use. CNL also uses decision analysis software (DTree) and reservoir simulation software (CHEARS) for rigorous production forecasting. SPDC also uses a proprietary probabilistic model. All these models are run independently and are not linked. NNPC NAPIMS and NPDC each have an economics model. Dubri uses an Excel spreadsheet model but does not elaborate what it is used for and POCNL has not specified its systems.

Specialists, such as reservoir engineers or cost engineers, or trained staff generally provide input to the various models. The economic models are run and the output interpreted by economists or specialists in the Planning Departments. Staff in CNL need to be certified in Capital Stewardship to interpret the output from their models and even then the outputs are subjected to a Peer Review. In MPNU the Development Planning Manager is responsible for all input and output from their proprietary economic model. The General Manager in Planning is responsible for the input to NNPC NAPIMS economic model and the Group General Manager interprets the output. It is unclear who actually provides the input to this model or from where the data originates.

Most of the computer models mentioned above have been developed in-house and will be specific to the joint venture or production sharing contract. The economic models are generally spreadsheet models, typically Microsoft Excel. Unless there is strict discipline in writing these models, such as with array formats, they can be difficult to audit. Excel models using cell referencing can lead to unintended errors occurring unless they are protected. Nonetheless with repeated use bugs can be identified and the models should be fit for purpose. As most of these models are proprietary none has been audited. From experience, greater uncertainty of the output comes from the input rather than from the models themselves. However it is paramount that experienced staff in the companies run these various models to be able to identify erroneous input and output.

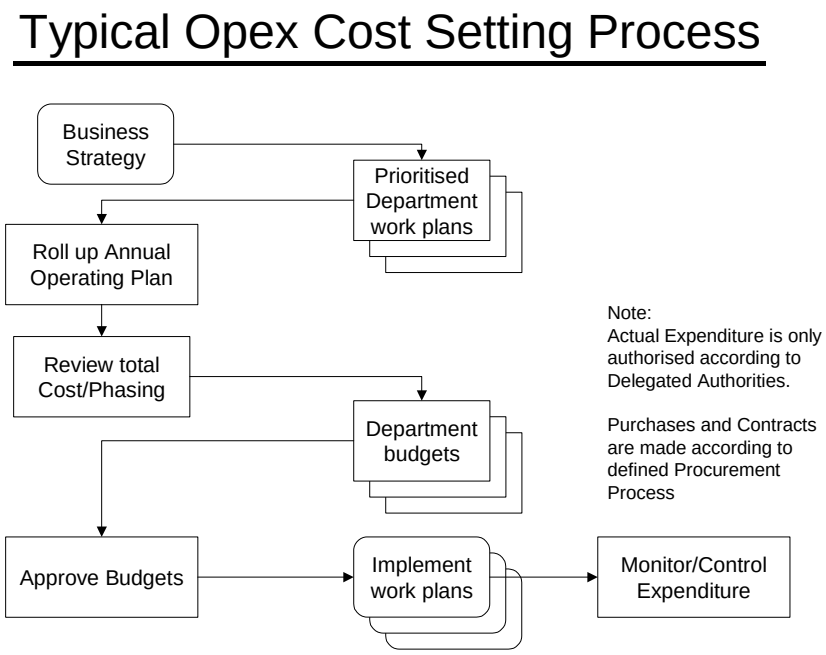
7.4.2 Recommendations

The main computer model used in the capital investment decision making area of the upstream business is an economics model used to economically value the opportunity or project, or various alternatives, as it advances through the maturation process. Other models tend to generate data for input to this model. Most models, other than Schlumberger's PEEP model, are proprietary and are written using Microsoft Excel. It is recommended that these models are properly structured, perhaps using array formatting, so that they can be easily audited. Individual cell referencing is not easily auditable. The models should also be protected. It is further recommended that specialists provide the input and that trained economists/planners are responsible for interpreting, providing insight and adding value to the output so that the project value is maximised.

8 OPERATING EXPENDITURE

This section of the report describes the stages of the operating cost setting process typically in use by the oil and gas industry in Nigeria.

8.1 Operating Cost Setting Process



The process described below is typical of how operating cost budgets are derived and set within an operating company. The JV Budget Approval and Monitoring processes for capital and operating costs are covered under sections 9 and 10 below.

1. From NNPC guidelines and Government objectives a company business plan is developed each year from which planning guidelines are derived and cascaded throughout the company.
2. Based on these guidelines and a fixed template, a budget is calculated at departmental level as a bottom up process, based on assumed activity levels, production and studies and unit costs.
3. Any shared costs are calculated.
4. Costs are then rolled up and a total is calculated.
5. The total budget is reviewed at management level and adjustments are made as appropriate.
6. The internally agreed adjusted budget is then reviewed with partners according to the JOA procedures (see section 8).
7. Further adjustments to individual budget items are made as necessary during the review process.

8. Agreed budgets are then given to department heads who remain responsible for expenditure within their budgets.

8.1.1 Comments on Operating Cost Setting Process

The keys to success in the above process is that the process itself should be transparent, so that budget holders remain responsible for their own budgets and understand the reasons for any adjustment required in their budgets, and that budgets are timely approved. If the budget setting process takes a long time between planning and approval then by the time it has been approved the planning assumptions on which it was based could be out of date and the budget inappropriate. Budgets should be reviewed mid-year to ensure they remain relevant to changing circumstances and this review process does usually take place.

9 REVIEW OF OPERATING EXPENDITURE PROCESS

This section includes a detailed review of the responses provided by the Companies to questions concerning their operating expenditure processes. Based on their responses to the questionnaire, Companies have then been appraised against what the consultants believe to be international good practice (INTERNATIONAL GOOD PRACTICE) and highlighted by italic text.

9.1 Setting the Operating Expenditure Budget

INTERNATIONAL GOOD PRACTICE – *A company business plan is agreed each year from which planning guidelines are derived. Based on these guidelines, an operating expenditure budget should be set each year as a bottom up process, based on assumed activity levels, production and studies, plus any shared costs as appropriate. Totals should then be reviewed at management level, and with partners according to the JOA procedures, and adjustments to individual budget items made as necessary during the review process. As long as the management adjustments are well communicated, ownership of individual budgets will remain with the budgeting departments. These departments should then remain responsible for expenditure within their budgets. The budget setting process should be documented and practiced by relevant staff.*

Questions 1 to 6 in section 2 of the questionnaire, attempt to ascertain what process is used in each company.

9.1.1 Review

Based on the responses, all companies as operators and POCNL, with the exception of POOC and Dubri, appear to have a process in place that conforms to good practice as described above. POOC takes last year's budget and projects it forward with upward or downward adjustments. Dubri confuses operating expenditure with capital.

NNPC NAPIMS, as a non-operator, reviews proposed budget items with operators at sub committee and Technical Committee levels according to JOA guidelines.

Budgets are generally held at middle management/department head level, which seems correct, with the exception of CNL, NPDC and CPL which appears to hold responsibility at a much higher Divisional Management level or in NPDC's case at director level. Ultimately the Managing Director is responsible overall for expenditure in a company but budget holders for operating expenditure should be at department head or middle management level so that variances can be immediately explained and, if appropriate, remedied.

Various methods are in place to hold budget account holders responsible for their budgets, according to the returns. Some have to explain variances to their managers/directors on a monthly basis (SPDC, MPNU, CNL, EPNL, NPDC and Agip); some are allocated the budget and have to remain within that budget (AEN, POOC, Dubri, CPL) whereas SNL has it as part of the budget holder's performance contract. All these seem appropriate in making budget holders accountable for their budget expenditure. It is suggested that reporting variances to management should also include remedial action to ensure the budget is adhered to. A formal periodic review, perhaps half yearly, would ensure the budget remains relevant and appropriate in changing circumstances. Many reporting companies already do this.

NNPC NAPIMS reviews expenditure against budget periodically with partners according to JOA procedures (see final report on detailed process and application of the category 1, 2 and 3 process). "Any item not acceptable to NNPC NAPIMS is either rejected for breach of procedure or lack of budget provision or is kept on hold pending provision of additional information for justification by the operators". As joint venturer, it is clearly NNPC NAPIMS' right to challenge expenditure under the JOA but NNPC NAPIMS should be in a position to act as an informed professional partner, not merely as financier.

Overall there seem to be adequate checks and balances in place to firstly set the budgets as a bottom up process and subsequently to monitor and control operating expenditure within the companies mainly by holding budget holders accountable for their own budgets. Further detailed monitoring is carried out by the non-operator(s), according to the JOA, in a process documented in the final report.

9.1.2 Recommendation

It is recommended that NNPC NAPIMS fulfil its role as joint venture partner and separate out its role as supervisor of the contract.

9.2 Operating Expenditure Allocation

INTERNATIONAL GOOD PRACTICE - *Budgets should be broken down into various account codes that can be readily identified by budget holders and can subsequently be allocated, by various allocation keys, to (future) revenue generating projects and fields. Direct costs can obviously be easily allocated to fields or projects. Many costs however support operations indirectly. Some office costs, such as salaries of management, HR costs, IT support, certain transport costs, business planning costs, TECOM/OPCOM studies/meeting costs, some HSE costs and so on fall into this second category where it is more difficult to allocate directly to fields and projects. Total operating costs can be divided by total production to provide a company unit cost per barrel. A fair allocation system should be in place to allocate all costs to individual producing fields or projects so that the economic viability, for example, of individual fields can be ascertained*. (It could be argued that certain fixed costs would not be affected by shutting in uneconomic fields. However when the last field stops producing even the so-called fixed costs will disappear, so there will be some change in 'fixed costs' as operational activities change.) *Viability decisions are not always straightforward but if the operating costs have been correctly account coded in the first place a rigorous management information system should be able to interrogate the data to provide the required information for making the correct management decisions.*

Questions 7 and 8 in section 2 of the questionnaire, requested information on account coding and allocation of shared costs.

9.2.1 Review

The question of account coding is always a source of difficulty. The IOCs are striving for common global charts of account, and seek standardisation in their project coding, so they can easily compare one project with another. However, each jurisdiction has its own treatments and local filing requirements that often cut across these global aspirations.

Consequently considerable time and effort is spent in reallocating costs and reconciling performance management data to accounts.

Companies tend to use account codes that recognise individual budgets without giving sufficient consideration to subsequent allocation to (potential) revenue generating fields/projects. There is a NNPC NAPIMS list of account codes that companies try to adhere to (derived from the JOA). There may be benefit in further sub-division of some of the budgets/codes with the above good practice in mind. For example SPDC readily admits that allocation of costs to individual fields is only done on a separate study basis and not routinely and this is probably the general case. Certain costs are reallocated to projects and fields by companies using time writing, production, usage, rig days, and so on so there is some basis in most companies for reallocating shared costs. CNL has a shared services model that seems comprehensive in reallocating shared costs.

9.2.2 Recommendation

It is recommended that the major companies together with NNPC NAPIMS review NNPC NAPIMS standardised account codes to see whether they are still relevant in being able to allocate costs to fields and projects and make changes as appropriate.

9.3 *Management Information Systems – Data Capture and Reporting*

The key to the good management information system is to ensure that costs are accurately recorded at the appropriate level of detail and in the most appropriate categories. The information system then needs to be able to investigate the costs in those categories at a high or low level of detail, preferably interactively. Operating costs should be able to be retrieved by category such as on a field/project level, a departmental level, or on a contract level for example. Interacting with other systems would ensure that unit operating costs (based on production for example) and other ratios could also be reported.

Computer systems here would mainly be a conduit for collecting/recording and verifying periodic operating costs from where they arise and periodically reporting them back, in an understandable format, to budget holders and management, highlighting variances from budget both numerically and, possibly for greater impact, graphically as well. Reasons for variances should also be documented where appropriate.

Typically the performance management aspect of cost control is driven by the current priorities of the IOCs as they seek to improve their overall performance. In general, cost control becomes a higher priority with low oil price and as fields mature.

INTERNATIONAL GOOD PRACTICE - *The management information system (MIS) should be able to capture all operating costs as they arise. This could be on an incurred (accrual) or invoiced (cash) basis. Date integrity checks should be in place. The MIS should periodically (monthly?) report expenditure against budgets to all budget holders and management, numerically and graphically. (A graphical display of expenditure vs phased budget can be a powerful management tool for some people.) Co-venturers should periodically (monthly or quarterly) be provided with progress reports of expenditure at a verifiable level of detail against budgets.*

Questions 9 to 16 in section 2 of the questionnaire, ask whether a Management Information System (MIS) is in place and how it functions.

9.3.1 Review

SAP is an enterprise resource planning (ERP) system that can incorporate data from financial and non-financial processes. It is a modular system and users can select the modules that they wish to have installed; for example it can optionally include Payroll, HR, Procurement and so on.

Each company may have a different version but SAP is used by SPDC, SNL, Agip, EPNL and POCNL, JDEdwards is used by CNL (Oneworld) and MPNU (IPES) and a Progen accounting system is used by POOC. Dubri uses a proprietary Excel spreadsheet model. All companies have data integrity checks either built in to their MIS or provided by other means, frequently manual checks against invoices, as well as periodic audit checks. All companies provide at least monthly reports to their budget holders, graphically illustrated by at least 6 of them, and apart from POOC, POCNL, CNL, EPNL, CPL and Dubri relevant operating cost data are available on-line on a real time basis.

Joint venturers, including NNPC NAPIMS, are generally updated on a monthly basis (AENR and NAE quarterly). NNPC NAPIMS is provided with the relevant information, from each operator, in an Excel based format in line with the JOA Uniform Accounting System. Adequate checks and balances for capturing and verifying operating expenditure appear to be in place for all companies supplemented by routine audit checks carried out by NNPC NAPIMS.

9.4 Management Information Systems – Management of Expenditure

INTERNATIONAL GOOD PRACTICE - *Senior managers should be able to aggregate and investigate cost variances against budgets for departments under their control. Budget holders should be held accountable for cost overruns and underruns. Incentives for staff and contractors should be in place to improve unit costs, (but not to the detriment of health, safety and the environment,) and hence reduce operating expenditure, but this should not lead to over budgeting in the first place. Fiscal incentives or penalties (e.g. the Tax Inversion Penalty) may be in place to drive costs down but there needs to be a 'value for spend' culture in the company for this to work effectively.*

Questions 17 to 22 in section 2 of the questionnaire, address the management of budgeted expenditure within a company.

9.4.1 Review

Most companies review ongoing expenditure against budget at management level on a monthly basis. Reviews with partners are usually through the periodic TECOM/OPCOM or cash call meetings. SPDC, SNL, CNL and AEN have implemented cost reduction initiatives internally, and externally with contractors, and appear to reward staff accordingly. In POCNL the annual Profit share is tied to controllable cost per boe. POOC disallows overruns. CPL and NPDC provide cost reduction incentives to staff through year end bonuses. Dubri encourages cost control but does not say how. The other companies seem to rely on the fiscal incentives or penalties, as provided by the MOU, to control expenditure but it is not clear how any incentives to keep within or below the MOU penalty levels are cascaded throughout each company.

Various methods are in place in the companies to try to hold costs down. NNPC NAPIMS has the benefit of reviewing all companies costs and is able to benchmark these costs and challenge companies through the TECOM process. Some companies use more stick

than carrot but the general aim has been to develop a cost/benefit culture throughout each company.

Internally generated cost recharges only seem to be present in the larger companies and also NPDC and CPL. CNL and MPNU have shared services agreements and costs are only recharged after costs have been agreed after negotiation, which ensures these are kept competitive.

SNL, SPDC, CNL and AEN have more than one IT system in place and these are linked together effectively.

All companies are satisfied with their MIS but continuous improvements are being implemented. POOC and CPL note that their systems are satisfactory for now but will have to introduce software or new software into their operations if they become larger in the future. MPNU notes that it is planning a transition to SAP, from JDE, for improved data management and retrieval.

NNPC NAPIMS indicated that although current systems within the operators are effective, investigation and control could be improved if NNPC NAPIMS also had online access to these systems.

10 JOINT VENTURE BUDGET APPROVAL PROCESS

This process is governed by procedures laid out in the JOA. Over time this process has been modified and the process described here are generally those that are practiced today.

1. NNPC issues guidelines and Government objectives to Companies.
2. Company management review guidelines and harmonize with company objectives.
3. Company issue guidelines internally for data collection.
4. Projects ranked in company and prioritised and Business Plan options created. Plan is for 1 year in detail with a directional long term (5 year) programme.
5. Options reviewed with management.
6. Approved management programme prepared and submitted to NNPC NAPIMS.
7. The submission from each operator is subjected to a joint review process by respective committees in the areas of Exploration, Petroleum Engineering, Facilities, Gas Development, Material Management and General Administration.
8. The sub-committees submit their report to JV Technical committee (TECOM).
9. TECOM further review the recommendation and a jointly agreed programme submitted to OPCOM for their consideration and approval.
10. OPCOM approved programme submitted to NNPC top management.
11. NNPC review OPCOM approved programme and take a view on the programme and budget and submits it to the Federal Ministry of Finance (FMF).
12. FMF finally advises the Government the acceptable investment level.
13. NNPC NAPIMS and Company respond and then jointly participate in National Assembly (NASS) and Senate Petroleum committee appropriation hearings.
14. After deliberation final total appropriation is communicated to NNPC via Government.
15. NNPC NAPIMS then allocates final budget amongst companies.
16. Companies then realign their programmes to fit approved budget level.
17. Where budgets have been reduced and programmes still need to be carried out, to meet company and government objectives, alternative funding, e.g. bank borrowing or carry arrangements, may be arranged to cover the budget shortfall, with approval of the Government. Company may still fund its share of the shortfall but not the NNPC share.

10.1 Comments on JV Budget Approval Process

As at the 16th March 2006 the budget for 2006 has still not been approved. It is expected that final adjusted budget approval for this year will be known by the end of March. For the period where companies are operating without budget approval there is a current understanding that companies can cash call within the previous year's budget level.

According to the Joint Operating Agreement (JOA), section 2.3, by "28th February of each year the Chairman of the OPCOM (NNPC) shall circulate to all parties a time table for submission, consideration and approval .." of the programme and budgets. The ".. programme and budgets shall be provisionally agreed to by the OPCOM not later than the 31st October, and finally approved not later than 31st December of that year."

Apparently the experience in 2006 is not exceptional. Not having a budget approved is disruptive to the Operators as work is delayed or contracts are not signed until the budget cover has been approved. Ultimately this slow down in work over the first quarter of each year will lead to extra expense due to delays in completion of projects and delays of revenue.

The process above is bureaucratic. The work programme and budget is reviewed and agreed by specialists from the company(ies) and NNPC NAPIMS in detail at the TECOM level. NNPC NAPIMS representatives on these committees have the benefit of reviewing a number of different companies at TECOMs and have access to data for benchmarking to which individual companies do not have access. Evidently this can be very challenging to the company personnel to deliver a well justified programme of work. On the other hand it has to be recognised by NNPC NAPIMS that not all companies achieve the same goals in the same way and efficiencies and new ways of operating are continuously being recognised. Benchmarking should be reviewed in this light so that value to be gained from the bigger picture is not lost in the benchmarking detail. Any disagreement or clarification of issues from TECOM are discussed and resolved at OPCOM level. The GGM of NNPC NAPIMS is usually the chairman of the OPCOM. In Joint Ventures elsewhere, outside Nigeria, the OPCOM or joint venture Management Committee (MANCOM) at a higher level is usually the senior authority able to finally agree and approve the annual programme and budget.

The senior Company representative on OPCOM usually has to go through company internal procedures to get the work programme and budget approved internally before agreeing a programme jointly with its partners. If NNPC NAPIMS senior representative followed the same procedure internally and was delegated sufficient authority then the annual programme and budget could be approved at OPCOM level in a timely manner. It is recognised however that certain budget procedures have to be followed within FGN to get final approval of the NNPC NAPIMS budget.

If this Government approval process cannot be accelerated then the following procedure could be implemented.

1. The programme and budget are discussed in detail at TECOM and a recommended programme and budget is submitted to OPCOM.
2. OPCOM review the programme and budget and after any adjustments the Annual Programme and Budget is finally approved at OPCOM level. The senior representative member of each company and NNPC NAPIMS must have the delegated authority to approve the Programme and Budget. This is the programme and budget that the JV Operator works to.
3. NNPC NAPIMS, NNPC and FGN then go through the due process of approving NNPC NAPIMS share of the OPCOM agreed budget.
4. If any downward adjustments are made to the OPCOM budget by FGN and NASS then NNPC NAPIMS share of the shortfall will have to be alternatively funded.

The advantage here is that it allows projects that do not get budget approval to go ahead under alternative funding arrangements, such as project financing. Some of the future cashflows generated by the project would be used to repay the borrowings with interest with the remaining cashflows generating surpluses. However the process will only be successful if companies are prepared to go down this route. If this above process is incorporated in the JOA then the consequence of any adjustment by FGN and NASS in the agreed budget will be known. It should ensure a fully justified budget is presented and defended up to NASS level.

Annually the JV companies each prepare a one year detailed programme together with a 5 year strategic view and present it to OPCOM for approval. During this 5 year period large, perhaps multi-billion dollar, projects may be included, which individually could take 4 to 5 years to be constructed. The programme will eventually get approval but there will be no funding to support it entirely as funding is only approved on annual basis based on the Government's annual budget cycle.

A project should get approval and funding at the start so that the project can be progressed to schedule over that time period knowing that budget approval is in place. It is economically unattractive to slow projects down once they have started just to wait for budget approval each year. This would not be consciously sanctioned by the companies but it does put them in a dilemma if funding is not there for the project expenditure and some slowdown may be inevitable over that period, due, for example, to contracts not being signed until budget cover is in place. If a programme and budget is approved by 31st December each year then the project should follow the planned schedule with no delays and no potential loss of value.

It is clear that the above current process can and does take too long to approve programmes and budgets. It is also evident that the programme and budgets are being micro-managed at a higher level than NNPC NAPIMS as upstream portfolio holder and manager.

A second option could be to instigate a top down process rather than a bottom up process. If a total annual FGN budget was approved each year before the start of the year then NNPC could be allocated a part of that total budget and be given responsibility to achieve targets and goals in the oil and gas business set by the policy makers in the National Assembly. NNPC NAPIMS would then be responsible for allocating its share of the budget to relevant parts of JV Operator programmes to achieve its goals as they would be given specific outcomes, efficiency and productivity targets based on clearly predetermined metrics to meet. Performance measures and indicators would be regularly applied to measure their success in pursuing the set targets.

This would give a certain amount of independence to NNPC but they would be held fully accountable to the FGN. Given this independence NNPC could also plan for expenditure over more than one year ensuring that projects approvals were given for the total project. A ranking procedure, as recommended above, would be necessary in this model.

10.1.1 ***Recommendations on JV Budget Approval Process***

The timing of the current annual budget approval process does not conform with the JOA in having the annual budget approved by the 31st December of the previous year. To achieve a timely approval programme it is recommended that the senior representative, on OPCOM, of each company and NNPC NAPIMS is of a sufficiently senior level or with delegated authority to be able to approve the annual work programme and budget at the

OPCOM level. Should NNPC NAPIMS share of the budget not be eventually fully approved then any shortfall will be alternatively funded.

An alternative approach could be to allocate NNPC a budget each year, as a top down process, and give NNPC authority and independence to manage their programme within that budget. NNPC would be responsible to FGN to meet targets and goals and be fully accountable to the FGN each year. NNPC NAPIMS would be wholly responsible and accountable for allocating budgets to the JV partners.

11 JOINT VENTURE BUDGET MONITORING PROCESS

This process is governed by procedures laid out in the JOA. Over time this process has been modified and the process described here are generally those that are practiced today.

1. Monthly cash call meetings between NNPC NAPIMS and company are used to approve cash releases and monitor project spending for the previous two months.
2. During the quarterly performance review, between companies and NNPC NAPIMS, reported expenditures are classified into 3 categories. Category 1 items are those expenditures that have adequate budget provisions and have been incurred within budget and in line with laid down procedures. Category 2 items are those that have budget provision but for which the actual expenditure is in excess of the budget provided. Category 3 items of expenditure are those that either have no budget provision or the expenditure has been made outside the laid down procedures or there is insufficient expenditure to justify the expenditure.
3. Category 1 items are accepted fully, Category 2 items are accepted provided there is sufficient information to justify the budget overrun and confirm value for money. Category 3 items may be further reviewed and accepted either partly or fully depending on the merit of the case and adequacy of information for justification. Such reviews may include specific audit exercises to confirm that the expenditure has actually been incurred and establish value for money. Budget overruns arising from accepted performance are treated as first line charge to the operator's share of the incoming year's budget.
4. There is a mid-year and end of year performance review at TECOM and OPCOM levels.

11.1 Comments on JV Budget Monitoring Process

The JV Approved Budget Performance should serve as a ceiling of Work Programme expenditure for each relevant year. However, discussions with JV Operators indicate that there are cost overruns or expenditure that are approved on a supplementary basis subsequent to the Approved Budget Performance. Some of these approvals are given two or even three years later.

JV Budget Performance approval should be streamlined so that:

1. Provision is made for a Supplementary Budget;
2. The Supplementary Budget should be approved by the OPCOM not later than three months after the end of the year it relates to;
3. The Approved Budget should fully incorporate the Supplementary Approved Expenditure and should in itself be approved not later than six months after the end of the year to which it relates.

There has been concern expressed by NNPC NAPIMS that JV Operators did not apply, across the board, uniform cost accumulation, apportionment and reporting procedures particularly as it relates to common costs, field costs and the use of assets for JV activities as distinct from PSC or sole activities. This had tended to blur cost reporting and control.

In order to institute a more transparent cost accumulation, apportionment and reporting procedure, NNPC NAPIMS, working through a Uniform Cost Accounting Procedure Committee – UAPC, has contracted two accounting firms to work on the following:

1) Common Cost Allocation

To produce and implement a Nigerian oil industry chart of accounts and proscribe standard accounting procedures for various funding methods.

2) Uniform Common Cost Allocation

To recommend and implement a fair common cost allocation system to be uniformly applied.

The above amounts to a review and updating of the Uniform Cost Accounting Procedures in the JOA and will enhance cost reporting and control by:

- a more robust, practical, relevant and modern system,
- creating accounting codes with depth to support uniform roll up,
- completely eliminating mapping from Operator's internal codes to NNPC NAPIMS codes where that is presently the case,
- supporting cost accumulation, allocation and apportionment on a realistic business basis
- enhancing cash call accounting and reporting
- enhancing work build up structure that will facilitate the application of modern upstream management tools – Development Project Guidelines using Gateways, Performance Measurement and Benchmarking.

It is also considered necessary for the upstream industry to evolve a consistent and structured process for establishing and reporting performance of capital, operating and decommissioning expenditure of upstream developments and projects. In line with the current focus of NNPC NAPIMS to restructure control processes, there is need for a Performance Measurement System (PMS) that allows NNPC NAPIMS to undertake performance measurement and benchmarking both at the industry or project level. To enable progress to be continuously made and value-for-money to improve, there is a requirement to ensure that data (Business, Technical, Cost and Schedule) from operators is structured in a manner that NNPC NAPIMS can utilise the information gathered to measure and challenge industry performance with realistic metrics.

The PMS will be NNPC NAPIMS driven using common language, definitions and metrics. The provision of common templates in support of a PMS will considerably enhance performance improvement processes in the industry.

12 CONTRACT AWARD PROCESS

This process is governed by procedures laid out in the JOA. Over time this process has been modified and the process described here are generally those that are practiced today.

Prequalification

1. Provision is made for the contract in the budget for the year contract would subsist
2. Prequalification advertisement prepared
3. Advertisement and contract strategy and evaluation criteria sent to NNPC NAPIMS
4. Approval from NNPC NAPIMS of contract objectives, evaluation criteria and advertisement
5 Advertisement placed in media (with deadline)
6. Pre-qualification bids received
8. Pre-Qualification Bid Opening with NNPC NAPIMS and Operator represented
9. Joint Evaluation Team scores prospective vendors (score over 60% is successful)
10. Pre-qualified list of vendors sent to NNPC NAPIMS for approval
11. Final approved list of vendors received from NNPC NAPIMS

Prepare & Issue Technical ITT

12. Draft copy of Invitation to Tender (ITT) sent to NNPC NAPIMS for approval
13. Approval of ITT received from NNPC NAPIMS
14. ITT issued to all pre-qualified contractors
15. Technical Bids received

Technical Evaluation

16. Technical Bid opening with NNPC NAPIMS and Operator represented
17. Joint Technical Evaluation Team scores technical bid vendors (score over 60% is successful).
18. Technical Clarification sought if necessary
19. Operator sends list of those technically qualified to NNPC NAPIMS for approval
20. Approved list received from NNPC NAPIMS

Prepare & Issue Commercial ITT

21. Draft copy of ITT commercial package sent to NNPC NAPIMS for approval
22. Approval of ITT received from NNPC NAPIMS
23. ITT issued to all technically qualified contractors
24. Operator prepares reliable in-house estimate of price of contract

25. Priced Commercial bids received

Commercial Evaluation

26. Commercial Bid opening with NNPC NAPIMS and Operator represented
27. Joint Commercial Evaluation Team evaluates bids
28. Commercial clarification sought if necessary
29. Operator evaluation report sent to NNPC NAPIMS for consideration
30. NNPC/NNPC NAPIMS recommendation received
31. Letter of Intent or Provisional Contract Award sent to successful contractor which should be the lowest bidder

12.1 Comments on Contract Award Process

It has been noted by a number of companies that the whole contract award process, from advertisement to award of contract, can take 18 to 24 months. With an annual budget cycle there is an obvious inconsistency in this whole process. If potential contractors with limited facilities are offered earlier opportunities then they may withdraw from the process and get work elsewhere which could lead to a potential loss of project value. It has been noted by one company that "the process is overly contentious, subject to interference by outside parties, and frequently results in the award of contracts to financially weak or poorly qualified contractors."

The process above is basically a three stage process – prequalification of contractors, technical qualification of the contractors, and a commercial proposal with award going to the lowest bidder. NNPC NAPIMS is always represented (by two people) at the bid openings and the evaluation stages. However in addition to this representation NNPC NAPIMS requires to separately approve the advertisement, contract strategy and evaluation each time, receive a list of all the prequalification bidders, approve the evaluated pre-qualified list of contractors, approve the technical ITT, receive all the technical bids, approve the evaluated technically qualified list of contractors, approve the commercial ITT, receive the Operators report and approve the final winning contractor.

All these approvals take considerable time and paperwork. The last step alone apparently requires Contracts Review Committee (CRC) approval (10 days), GEC approval (20-30 days) and NNPC Board approval (20 days). The process of advertising or ITT, bid opening and evaluation at each stage with representation of all parties is good practice. If NNPC NAPIMS representatives had sufficient delegation of authority, then the need for higher levels of approval would not be necessary, and the process would be much quicker and clearly more transparent.

Schedule "C", Uniform Project Implementation Procedure, and Section 3, Contract Tender Procedure, of the JOA sets out the process for awarding contracts. Current practice is that contracts are advertised first to attract potential bidders rather than only sending invitations to tender to contractors on an "Approved Contractors List" as stated in the JOA. This does require the bidders to be pre-qualified each time but this current process seems open and acceptable. However it is unclear why NNPC NAPIMS needs to

approve all advertisements when a majority of the advertisements are just repeats of earlier advertisements. Section 3.2 of the JOA states:

> "The Operator shall establish a bid Committee who shall be responsible for pre-qualifying bidders, sending out bid invitations, receiving and evaluating bids and determining successful bidders to whom contracts shall be awarded."

This is followed by section 3.3 which states:

> "Analyses and recommendations of bids received and opened by the bid Committee shall be sent by Operator to Non-Operator for concurrence before a contract is executed with the selected contractor. The Non-Operator shall respond within fifteen (15) working days. Approval shall be deemed to have been given if the Non-Operator has not responded within the said period."

The JOA procedure is reasonably clear that approval from the Non-Operator is only required at the last stage "before a contract is executed with the selected contractor", and this approval shall be given within 15 working days or will deemed to have been given. If the JOA procedure is followed then the process would move ahead much quicker, with fewer internal approvals required from NNPC NAPIMS, relieving NNPC NAPIMS of much paperwork, but at the same time giving the Non-Operator time to react, in a reasonable time frame, before a contract is awarded.

Recognising the time taken to approve award of contracts and the practicality of many contracts running over more than one year, NNPC NAPIMS now allows contracts to be awarded, if required, for a period of 2 years with an optional extension of one year.

NNPC has recognised this delay as a problem in the change process under their project PACE (Positioning, Aligning, Creating of Awareness and Empowerment of Staff) and are planning to introduce an internet based Joint Qualification System (JQS) with an electronic market to improve the contract process, but real improvement will only come with proper delegation of authority levels and real empowerment of staff.

Good industry practice is to award a contract to either the lowest cost provider or the contractor giving best value. As an example it may be better to award a contract to someone who can guarantee a delivery date for a service or a piece of equipment than someone who cannot, even if the one who can guarantee the delivery date may be a little more expensive. The life cycle cost of a piece of equipment provided by a contractor should also be taken into account. If a piece of equipment is projected to need servicing every few weeks it may be better to pay a bit more for the piece that only needs servicing every say 6 months. The initially more expensive piece of equipment may turn out to be actually cheaper over its life cycle.

12.2 ***Recommendations on Contract Approval Process***

Award of contracts needs to be accelerated and this will occur if NNPC NAPIMS does not require approval at every level. NNPC NAPIMS representatives are present at every stage of the above process. If these representatives are delegated the correct level of authority then higher internal approvals within NNPC NAPIMS will be unnecessary, the

process will be more transparent and contract awards will be accelerated. It is recommended that NNPC NAPIMS representatives involved in the contract award process are delegated the correct level of authority to approve contract award. It is probable that different representatives, with different delegated authorities, will be present for different ranges of contract values.

In considering who to award a contract to it should be made clear that the award should go to the contractor giving the best value, as stated in the JOA, rather than to the lowest bidder. This may require more scrutiny at the pre-qualification and technical level but then eliminating non-performing contractors should reduce project delays.

13 PROCUREMENT PROCESS

This process is governed by procedures laid out in the JOA. Over time this process has been modified and the process described here are generally those that are practiced today.

1. Material Requisition raised and signed by authorised personnel. (Assume price known from previous order).
2. Quotation requested from at least 3 suppliers from the vendors data base.
3. Quotations registered and opened by Procurement Tender Board.
4. Quotations evaluated in accordance with set criteria.
5. Selection presented to NNPC NAPIMS for approval.
6. Purchase order (PO) agrees with Material requisition.
7. Correctly authorised PO issued to lowest cost bidder or approved vendor.
8. Vendor signs and returns copy to company Procurement.
9. Vendor supplies goods as specified in PO.
10. Goods checked and recorded at point of delivery.
11. Goods received note passed to Finance.
12. Vendor submits invoice to Finance according to contract.
13. Invoice details immediately recorded by Finance.
14. Operator/Finance checks invoice against goods received and pays vendor according to contract.

13.1 ***Comments on Procurement Process***

The above process is the correct procurement process which should ensure, if implemented appropriately, that goods are bought from the correct supplier, are ordered, delivered, checked and recorded before being paid for.

According to the JOA Schedule “C” Section 5 “Materials and Equipment Procurement Procedure” the goods do not have to be purchased from the lowest bidder. Other factors can be taken into account to achieve the best value to the Joint Operations. Clause 5.4.1 states that Operator shall:

> “By means of established policies and procedures ensure that its procurement efforts provide the best total value, with proper consideration of quality, service, price, delivery and operating costs to the benefit of the Joint Operations;”

13.2 Recommendations on Procurement Process

It is recommended that procurement procedures comply with the JOA which is to ensure that its procurement efforts provide the best total value, with proper consideration of quality, service, price, delivery and operating costs to the benefit of the Joint Operations.

14 SUMMARY

In the processes reviewed above it is clear that the IOCs generally have well documented procedures in place that are generally followed with the aim of achieving maximum value from the projects in which they invest. As IOCs tend to work together in many areas of the world, best practices tend to be adopted by each company as an ongoing process. It is therefore not surprising to learn that many IOCs have similar procedures to each other in use in their companies.

The five stage-gated approach to Capital Investment Decision Making is one of those procedures that has found favour in most of the large companies. The smaller companies or independents generally do not have such advanced practices documented or used within their companies and as a consequence may be not be achieving maximum value from implementation of their projects. Inevitably this is a learning process for the smaller companies and by working with the IOCs a transfer of this technology will take place with a consequential benefit to them.

It is noteworthy that NNPC / NNPC NAPIMS appears not to have a system for allocating scarce investment capital between competing projects. This is an aspect that requires development.

NNPC NAPIMS has the benefit of working closely with the IOCs in the Joint Ventures in Nigeria. NNPC NAPIMS sees itself as Investment Managers rather than as partners in a joint venture. It is unclear whether the potential technology transfer is being recognised by NNPC NAPIMS or can be used by NNPC NAPIMS in its current role. NPDC, another NNPC company, would benefit from this technology transfer as it is a small operator. It is recommended that NNPC NAPIMS reviews its current role and see whether it is benefiting fully in its role as a JV partner.

JV budget approvals and budget monitoring together with procurement of goods and services seem to have developed into somewhat bureaucratic processes. As a consequence approvals take longer than they should. This can lead to inefficiencies in implementing projects. The JOA sets out these processes in a logical way and the aim should be to revert to the JOA processes. Some of the additional approval processes are subject to the realities of the Government budgetary system and this is the case for JV budget approvals with the consequence that in the middle of March the annual programme and budget has still not been approved for the JV companies for 2006. A recommendation has been made to finally approve the budget at OPCOM level with any downward adjustments approved at National Assembly level covered by alternative financing. This could only be achieved by giving the senior representative of NNPC NAPIMS on OPCOM sufficient delegated authority. This approach would also depend on each company's willingness to go down this route.

Procurement of goods and services has also developed into a bureaucratic process with contract awards taking up to 24 months from advertisement preparation. Again the main problem is that NNPC NAPIMS representatives are not delegated sufficient authority to approve the various steps in the process. If NNPC NAPIMS representatives were given sufficient delegated authority, similar to authority levels given to the company representatives, approvals would not be required at higher levels within NNPC NAPIMS for each step of the process. The contract award process would then be significantly shortened and more transparent.

APPENDICES

Responses to the Questionnaire