



**DEPARTMENT OF
PETROLEUM RESOURCES**
...Petroleum Regulatory Agency of Nigeria



GUIDELINES FOR UNITISATION OF OIL & GAS FIELDS IN NIGERIA



Revised Edition, 2019





DEPARTMENT OF PETROLEUM RESOURCES

...Petroleum Regulatory Agency of Nigeria

DPR

FOREWORD

The Department of Petroleum Resources is empowered by the Provisions of Section 48 of the Petroleum Act (CAP P10) Laws of the Federation of Nigeria 2004 to ensure that all Hydrocarbon bearing reservoir(s) that straddles one or more Concession boundaries are developed as a single Unit. In line with this statutory provision, the Department in 2008 developed Guidelines for Unitisation and Development of Straddling and Contiguous Non-Straddling Reservoirs. This publication is an update to the existing 2008 Guidelines for Unitisation in Nigeria and is predicated on the observed notable gaps as well as new developments in the industry. This edition clearly addresses issues such as Data Exchange, Development of Reservoirs, Joint Field Development Studies, Determination and Redetermination, Notification Date, Reference Date and International/cross border Unitisation.

It is the prerogative of the Department of Petroleum Resources to update this publication periodically as new gaps are identified.

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THE DIRECTOR OF PETROLEUM RESOURCES



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INTRODUCTION

Unitisation is initiated when Hydrocarbon accumulation within a geological trap(s) (structural, stratigraphic, or combination of both) is confirmed to straddle one or more Concession boundaries and the Parties are required by extant laws to jointly develop the Field as a Unit.

The joint development of Straddling Reservoirs and Contiguous Non-Straddling Reservoirs would increase reserves, government take and rate of return on investment, maximize ultimate recovery, eliminate proliferation of production facilities, reduce development and operating costs.

The Department of Petroleum Resources is empowered by the Provisions of Section 48 of the Petroleum Act (CAP P10) Laws of the Federation of Nigeria 2004 to ensure that all Hydrocarbon bearing reservoir(s) that straddles one or more Concession boundaries are developed as a single Unit. The existing Guidelines for Unitisation in Nigeria, 2008 were made pursuant to the Provisions of Section 44 of the Petroleum (Drilling and Production) Regulations and the powers conferred on the Minister under Section 9 of the Petroleum Act (CAP P10) Laws of the Federation of Nigeria 2004.

These Guidelines seek to set out rules and procedures for the effective administration and management of Unitisation of Straddling Reservoirs and Contiguous Non-Straddling Reservoirs that have been agreed by the Parties to be developed as a single Unit in accordance with the objectives and principles set out in the Regulations and global best practice.

This edition addresses the observed gaps identified in the existing Guidelines for Unitisation in Nigeria, 2008 and incorporates International (Cross Border) Unitisation.

The issuance of these Guidelines in no way absolves the operator or licensee from compliance with other relevant legislation/ regulation(s).

Any revisions and amendments to these Guidelines shall be issued as and when necessary.



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DEFINITION & PURPOSE

This document is the standard Procedure Guide for Unitisation of Straddling or Contiguous Non-Straddling Fields in Nigeria.

The purpose of this document is to provide a reference material and authorized document guiding the process of Unitisation in Nigeria.



LAWS AND REGULATIONS

Unitisation of Straddling Fields and Contiguous Non-Straddling Fields are statutory responsibilities of the Department pursuant to the Provisions of Section 44 of the Petroleum (Drilling and Production) Regulations and Section 9 of the Petroleum Act (CAP P10) Laws of the Federation of Nigeria 2004 which states as follows:

44. The Director, Petroleum Resources may give such directions as may in his opinion be necessary from time to time to ensure the proper exploitation of petroleum and to encourage good conservation practices in any licensed or leased lands; and the licensee or leasee shall comply with any such directions which affect him.
9. Regulations
 - (1) The Minister may make regulations –
 - (a) Prescribing anything requiring to be prescribed for the purposes of this Act;
 - (b) Providing generally for matters relating to licences and leases granted under this Act and operations carried thereunder, including:
 - (i) Safe working;
 - (ii) The conservation of petroleum resources;
 - (iii) The prevention of pollution of water courses and the atmosphere;
 - (iv) The making of reports and returns (including the reporting of accidents);
 - (v) Inquiries into accidents;
 - (vi) The keeping and inspection of records, books, statistics, accounts and plans;
 - (vii) The measurement of production, and
 - (viii) The measurement of crude oil delivered to refineries
 - (c) Regulating the construction, maintenance and operation of installations used in pursuance of this Act;
 - (d) Regulating refineries and refining operations, and, where two or more refineries are in operation, specifying:
 - (i) The proportion or quantity of crude oil to be supplied to each refinery,
 - (ii) The share of each refinery in the total market, and
 - (iii) The prices of refinery products;



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- (e) Regulating the importation, handling, storage and distribution of petroleum, petroleum products and other flammable oils and liquids, and in particular (without prejudice to the generality of the foregoing) –
 - (i) Prohibiting the importation or exportation of petroleum or petroleum products except at specified ports or places;
 - (ii) Prescribing the notice to be given (and the person by whom the same shall be given) on the arrival at a port of a ship carrying petroleum or petroleum products as cargo;
 - (iii) Defining dangerous petroleum and dangerous petroleum products, prescribing anchorages for ships carrying dangerous petroleum or dangerous petroleum products as cargo and requiring those ships to proceed to and remain at those anchorages;
 - (iv) Regulating the loading, unloading, transport within a port, landing, trans-shipment and shipment of petroleum and petroleum products;
 - (v) Providing for the licensing of lighters and other craft to carry petroleum and petroleum products within a port;
 - (vi) Prescribing conditions and restrictions to be imposed upon vessels arriving at a port after having carried petroleum, petroleum products, dangerous petroleum or dangerous petroleum products;
 - (vii) Providing for the examination and testing of petroleum and petroleum products, and prescribing the tests to be applied to ascertain its flash point and the method of applying those tests; and
 - (viii) Subject to subsection (2) of this section, regulating the transport of petroleum and petroleum products, prescribing the quantity of petroleum and petroleum products which may be carried in any vessel, cart, truck, railway wagon or other vehicle, the manner in which they shall be stored when being so carried, the receptacles in which they shall be contained when being so carried and the quantities to be contained in those receptacles, and providing for the search and inspection of any such vessel, cart, truck, railway wagon or other vehicle;
- (f) Conferring or imposing on public officers for the purposes of this Act powers and duties additional to those conferred or imposed by Section 8 of this Act;
- (g) Where paragraph (a) of this subsection does not apply; prescribing –
 - (i) Forms to be used for the purposes of this Act, and



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- (ii) Fees to be charged in connection with the operation of this Act (including, without prejudice to the generality of the foregoing, fees for the giving of any permission by the Minister and for the supplying of any document or other material, the carrying out of any examination and the doing of any other thing by him); and
- (h) Providing for such other matters as in his opinion may be necessary or desirable in order to give proper effect to this Act.
- (2) Regulations made under subsection (1)(e)(viii) of this section shall apply only where petroleum or petroleum products are being transported –
 - (a) On the waters mentioned in item 36(a) and (b) of Part I of the Second Schedule to the Constitution of the Federal Republic of Nigeria 1999; or
 - (b) By railway or transport ancillary thereto; or
 - (c) On trunk roads within the meaning of item 62 of that Part of that Schedule.

[Second Schedule, Cap.C23]



DEFINITIONS

Unless otherwise stated, capitalised terms used in these Guidelines shall have the meaning stated below and shall include the plural as well as the singular.

"Brown" means a designation that shall refer to a Field or Reservoir from which there has been production prior to unitisation.

"Brown-Brown" means a designation that shall refer to a Straddling Field or Straddling Reservoir from which there has been production from each Concession prior to unitisation.

"Brown-Green" means a designation that shall refer to a Straddling Field or Straddling Reservoir from which prior to unitisation there has been production from one Concession but not from the other Concession(s).

"CIIP" means Condensate initially in place.

"Communication" means pressure communication through the Hydrocarbon column across the Concession boundary.

"Concession" means a license or lease granted for Hydrocarbon operations in Nigeria over a defined area.

"Condensate" means that portion of hydrocarbons existing in the reservoir in the condensed state, associated with the free gas phase in the Reservoir that is in a liquid state at Standard Atmospheric Conditions or liquid drop out at the surface from wet gas and volatile oil reservoirs.

"Contiguous" means neighboring, adjacent, adjoining, nearby or bordering.

"Contiguous Non-Straddling Reservoir(s)" means Hydrocarbon accumulation(s) or Reservoir(s) that are neighboring, adjacent, adjoining, nearby or bordering the Straddling Reservoir(s) and are proven not to extend across the boundaries between the Concession.

"Cross-border Unitisation" has the meaning ascribed to it in Paragraph 14 (a).

"Determination" means the calculation of the initial Tract Participation.

"Discovery" means proving the occurrence of Hydrocarbon accumulations through drilling.

"DPR" means Department of Petroleum Resources.

"FGIIP" means free gas initially in place.

"Field" means any Hydrocarbon accumulation which is contained in a single Hydrocarbon bearing Reservoir or in multiple Reservoirs, which may be overlapping or non-overlapping



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or stacked Reservoirs, which may include separated pools and are defined by a geological trap (i.e. anticline, block-fault, stratigraphic trap, etc.).

"Field Development Plan" or "FDP" means the plan for the development of a Field or Reservoir as agreed by the Parties and approved by DPR and as may be updated from time to time.

"Geological Structure" means any such geological setting which is defined as a structural trap, stratigraphic trap, or combination trap that allows for the accumulation of Hydrocarbons.

"GIIP" means gas initially in place. It refers to the summed volumes of FGIIP plus SGIIP.

"Green" means a designation that shall refer to a Field or Reservoir from which there has been no production prior to unitisation.

"Green-Green" means a designation that shall refer to Straddling Fields or Straddling Reservoirs from which there has been no production prior to unitisation.

"Hydrocarbon" means oil, gas (associated & non-associated) and condensate.

"HIIP" means Hydrocarbons initially in place at standard conditions. It refers to all STOIIP, FGIIP, SGIIP, GIIP and CIIP which, when summed, are usually expressed in barrel of Oil equivalent units.

"Initiating Party" shall have the meaning given to it in Paragraphs 4.1 (a), 4.2(b) and 4.3(a).

"International Unitisation Agreement" means an agreement to be signed by the oil companies from two or more Countries in a Cross-Border Unitisation.

"Minister" means Minister of Petroleum Resources.

"Nigerian Party" means the oil company from Nigeria in a Cross-Border Unitisation.

"Non-Straddling Reservoir" means any Hydrocarbon accumulation(s) or Reservoir(s) that is proven not to extend across the boundary between Concessions.

"Notification Date" means the date DPR confirms straddling and notifies the Parties in writing that the Reservoir(s) should be considered for unitisation following compliance with the requirements of these Guidelines.

"Oil" means mineral oil in its natural state before it has been refined or treated excluding water and other foreign substances.



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“Participating Interest” means the interest held by a Party under the applicable Concession, joint venture joint operating agreement, marginal field joint operating agreement, production sharing agreement or the interest held by a contractor party under the applicable production sharing contract.

"Party" means grantee, licensee, lessee under the Petroleum Act and contractor under the production sharing contracts or other similar arrangement, or any person holding an interest in the Unit.

“Provisional Tract Participation” means the equity interest assigned to each Concession in a Unit Area as determined in accordance with methods, principles and procedures as provided in Paragraph 7 pending the Determination of the initial Tract Participation.

PUA" means Pre-Unitisation Agreement.

“Redetermination” means the calculation of Tract Participation based on new or additional information.

"Reference Date" shall have the meaning given to it in Paragraphs 4.1(c), 4.2(d) and 4.3(d).

"Regulations" means the Petroleum (Drilling and Production) Regulations made pursuant to the Petroleum Act Cap P10, Laws of the Federation of Nigeria 2004 and any amendments thereof.

"Reserves" means the estimated volumes of crude oil, condensate, natural gas, natural liquids and associated substances anticipated to be commercially recoverable from known accumulations from a given date forward, under existing economic conditions, by established operating practices, and under current government regulations.

"Reservoir" means a porous and permeable rock containing Hydrocarbon accumulation that is in Communication. The rock may be grouped based on stratigraphy, sedimentology, rock properties and fluid properties.

"Rsi" means initial solution gas/Oil ratio at Reservoir conditions, measured in standard cubic feet per stock tank barrel.

"Scf" means standard cubic feet.

"SGIIP" means solution gas initially in place.

"Standard Atmospheric Conditions" means the conditions at an absolute pressure of 14.65 psia and sixty (60) degrees Fahrenheit.

“State” means Country.

"STOIIP" means stock tank Oil initially in place. It refers to original oil pore volume converted to Oil volume at Standard Atmospheric Conditions.



"Straddling Field" means any Field where one or more of its Hydrocarbon accumulation(s) or Reservoir(s) are proved to extend across the boundary between Concessions.

"Straddling Geological Structure" means any Geological Structure which is proved to extend across the boundary between Concessions.

"Straddling Reservoir" means any Hydrocarbon accumulation(s) or Reservoir(s) that are proven to extend across the boundary between Concessions.

"Tract" means that portion of a Concession located within a Unit Area.

"Tract Participation" or "TP" means the equity interest assigned to each Concession in a Unit Area as determined in accordance with methods, principles and procedures as provided in Paragraph 7.

"Treaty" means for the purposes of these Guidelines the agreement to be signed between two or more States in a Cross-Border Unitisation.

"Unit" shall have the meaning given to it in Paragraph 3.1.

"Unit Area" shall have the meaning given to it in Paragraph 3.2.

"Unit Operator" means a Party appointed pursuant to Paragraph 5 to carry out Unit operations.

"Unitised Field" means any Straddling Field or Reservoir, including any agreed non straddling Hydrocarbon pools and satellite Fields or Reservoirs subject to Unitised Development.

"Unitised Development" means the joint development of a Unit for the production of Hydrocarbons in accordance with the terms and conditions agreed by the Parties.

"Well" means a borehole drilled for Hydrocarbon exploration, appraisal or development activity.



1. IDENTIFICATION OF STRADDLING GEOLOGICAL TRAPS

1.1 Geophysical Data Acquisition

It is mandatory for each Party carrying out geophysical activities within two (2) kilometres of its Concession boundary(ies) to shoot across the Concession boundary(ies) into the neighbouring Concession to a distance of not less than two (2) kilometres with the knowledge and/or cooperation of the other Party(ies) and due authorisation by DPR. The same geophysical data should also be processed and interpreted. Processed seismic data which have been acquired beyond the Concession boundary(ies) shall be provided to the other Party as a courtesy.

1.2 Geological Mapping

Geological traps (structural, stratigraphic, or combination of both) considered to straddle one or more Concession boundary(ies) shall in a timely manner be mapped across the Concession boundary(ies) with the knowledge of the other Party/Parties.

2 NOTIFICATION OF HYDROCARBON DISCOVERY

2.1 Notification to DPR

The Party making a Discovery in a geological trap(s) (structural, stratigraphic, or combination of both) which appears to straddle one or more Concession boundaries, shall submit a report of the Discovery to the DPR, within two (2) months of Well suspension or abandonment. The said report shall state the Concession(s) into which the geological trap(s) appear(s) to straddle, the number of Hydrocarbon intervals and columns, and flow rates where available.

2.2 Notification to Other Parties

(a) Where there is Discovery by a Concession holder in geological traps (structural, stratigraphic, or combination of both) that appears to extend into one or more adjoining Concession(s) in which the Concession holder(s) has/have not done any exploratory work, the following shall apply:

(1) DPR shall within one (1) month of the receipt of the report of the Discovery, notify the other Concession holder(s) of the Discovery and request such Concession holder(s) to start exploration activities in the affected part of the Concession to confirm the existence of Hydrocarbon in the geological trap which appears to straddle a Concession boundary.

(2) Within two (2) months of the receipt of notification from DPR, the other Concession holder(s) shall indicate in writing a willingness to confirm the existence of Hydrocarbon in the Straddling Geological Structure. Thereafter, such other Concession holder(s) shall, within three (3) months submit either;

(i) A statement of intent or willingness to conduct an exploration programme that is acceptable to the DPR in terms of scope and timing,



- (ii) Or submit any written rebuttal(s) to DPR with copies to the other Party.

If the other Concession holder(s) fail(s) to do either (2(i)) or (2(ii)) then the DPR shall invite all the Concession holder(s) to discuss and agree a way forward.

If the other Concession holder(s) submit a written rebuttal, the DPR may invite all the Concession holders for an explanation, failing which, the Minister may take further steps necessary to enforce compliance in accordance with the Regulations.

- (b) In addition to Paragraph 2.2(a), for the existing producing and non-producing Fields, the DPR after being satisfied that such a Field in a Concession straddles the boundary(ies) of the said Concession and that of other Party's/Parties' Concession, will in writing notify the other Party and direct the Parties to take appropriate actions to develop the Field as a Unit.
- (c) Within one (1) month of the Notification Date issued by the DPR, the DPR shall convene the inaugural meeting to commence unitisation.

2.3 Minimum Requirements for Initiation of Unitisation

The minimum requirements for the commencement of a unitisation process for straddling Reservoirs shall be the following;

- (a) Identification of Straddling Reservoirs by seismic Data, Drilling and Discovery through either;
 - (i) Drilling on both sides of the Concession boundary(ies) or
 - (ii) An agreement by the Parties that data derived from a Well drilled on one side together with appropriate seismic information is sufficient to initiate unitisation discussions.
- (b) Informing DPR and the affected Parties as provided in Paragraphs 2.1 and 2.2.
- (c) Exchange of data for the Well(s) that proved straddling including relevant seismic data.

2.4 Data Exchange

- (a) All relevant data to be exchanged by the parties as stipulated in Schedule 1 for the purpose of unitisation shall be agreed and exchanged by the Parties (under the supervision of the DPR) pursuant to a confidentiality agreement to be executed by the Parties. However, if the Parties fail to agree on the data to be exchanged within the stipulated time, the DPR shall intervene and use its best endeavour to resolve the dispute for the Parties.



- (b) All relevant data, letters, materials and information exchanged between the parties in respect to unitisation shall be submitted to DPR.

3 UNIT AREA

3.1 Definition of Unit

A Unit shall be defined as including at least one (1) Hydrocarbon bearing Reservoir that straddles a Concession boundary. This may also include any Contiguous Non -Straddling Reservoir(s) that has been agreed to be developed with the Straddling Reservoir(s) a single development.

3.2 Definition of Unit Area

The Parties shall clearly define the Unit Area. A Unit Area shall be delineated by geographic coordinates encompassing the Straddling Reservoir(s) and may include Contiguous Non-Straddling Reservoir(s) that has been agreed by the Parties.

3.3 Content of a Unit

(a) All Straddling Reservoir(s) shall be developed as a single entity and unitised according to these Guidelines and shall be subject to Unitised Development. No Party shall develop its part of a Straddling Reservoir except by agreement of the Parties and with DPR's approval.

(b) The Unitised Development may also include Contiguous Non-Straddling Reservoir(s) that could optimally be exploited as part of a single development.

Provided that the above does not prejudice the rights of Parties to progress a joint development of Non-Straddling Reservoir(s).

3.4 Unit Agreement(s)

The Parties involved shall execute the necessary Unit agreement(s), which will govern the operation of the Unit The unit agreements shall include the following:

- (a) Pre Unitisation-Agreement
- (b) Unitisation and Unit Operating Agreement
- (c) Unit Agreement and Contractor Unit Operating Agreement

4 DEVELOPMENT OF RESERVOIR(S)

4.1 Non-Producing Reservoir(s) (Green-Green)

(a) Where a non-producing Reservoir has been confirmed to straddle Concession boundaries in accordance with the provisions of Paragraph 2 of these Guidelines, the



unitisation of such Reservoir shall be initiated by any of the Parties involved (Initiating

Party). The Initiating Party shall make its intention of unitising the Reservoir(s) known to the other Party(ies) in writing. The Initiating Party shall also notify DPR by a copy of such letter of intent. The other Party(ies) may submit any written reservations within two (2) months to the Initiating Party with copies to DPR.

If the other Party(ies) submit a written reservation, the DPR may invite all the Parties for a resolution of the issues raised in the reservation, failing which, the DPR may take further steps necessary to enforce compliance in accordance with the Regulations.

- (b) All relevant data pertaining to straddling reservoirs (as specified in Schedule 1) shall be exchanged under the supervision of DPR.
- (c) Reference Date for the commencement of the unitisation process is the date DPR notifies the Party(ies) in writing that, in compliance with the requirements of Paragraphs 2.3 and 4.4, the Reservoir(s) should be unitised.

4.2 Producing and Non-Producing Reservoirs (Brown- Green)

- (a) In accordance with the provisions of Paragraph 2 of these Guidelines, once a producing Reservoir(s) has been confirmed by DPR as straddling a Concession boundary(ies) and the Parties involved have been notified by DPR in writing to that effect no other Well shall be drilled into the said Reservoir(s) except as agreed by both Parties.
- (b) The unitisation of such Reservoir(s) in the Field shall be initiated by any of the Parties involved ("Initiating Party"). The Initiating Party shall make its intention of unitising the Reservoir(s) known to the other Party(ies) and the DPR in writing.
- (c) All relevant data pertaining to straddling reservoirs (as specified in Schedule 1) shall be exchanged under the supervision of DPR.
- (d) The Reference Date shall be the date that DPR states in writing to be the time at which the non-producing Party established straddling through seismic data, drilling and Discovery. If there is evidence of possible straddling shown by seismic or Well data; and a statement of possible straddling was not communicated to DPR by the producing Party, the Reference Date shall be the date the producing Party commenced production in the Field.

4.3 Producing Reservoirs (Brown-Brown)

- (a) Where a producing Reservoir(s) straddles a Concession boundary(ies), the unitisation of such Reservoir(s) in the Field shall be initiated by any of the Parties



involved ('Initiating Party'). The Initiating Party shall make its intention of unitising the Reservoir(s) known to the other Party(ies) and the DPR in writing.

- (b) Once a producing Reservoir(s) has been confirmed by DPR as straddling a Concession boundary(ies) and the Parties involved have been notified by DPR in writing to that effect, no other Well shall be drilled into the said Reservoir(s) except as agreed by both Parties.
- (c) All relevant data pertaining to Straddling Reservoirs (as specified in Schedule 1) shall be exchanged under the supervision of DPR.
- (d) The Reference Date shall be the date of notification to the Parties by the DPR that the Reservoir(s) are straddling following its review of data submitted by the Parties.

4.4 Purpose of Notification and Reference Dates

- (a) The Notification Date shall serve the purpose of establishing the commencement date for unitisation discussions.
- (b) The Reference Date shall serve the following purpose:
To determine the date when unitisation is deemed to have commenced, and to establish when the re-adjustment of past costs and production shall take effect in respect of the following situations:
 - (i) non-producing and producing Fields (Green/Brown), and
 - (ii) producing Fields (Brown/Brown).

5 UNIT OPERATOR

The Parties shall within three (3) months from the Notification Date select a Unit Operator from amongst themselves to operate the Unit. The parties shall promptly notify DPR the unit operator.

Considerations for the appointment of a Unit Operator may include:

- (a) Proximity to existing facilities
- (b) A Party having Participating Interest
- (c) Technical competence
- (d) Financial capability
- (e) Operator track record
- (f) HSSE
- (g) Community relations and advantage of established presence
- (h) Logistics
- (i) Indigenous capacity building



However, where the Parties fail to reach an agreement on a Unit Operator, DPR shall appoint the Unit Operator.

The Unit Operator shall furnish DPR with quarterly report of all activities carried out in the Unit. Planned activities for the next quarter shall also be provided to DPR.

6 UNIT COMMITTEES

The DPR shall set up unit committees and such other subcommittees as may be necessary. The functions of the respective committees are enumerated below:

6.1 Steering Committee

This committee shall:

- (a) Set up/inaugurate any advisory sub-committee as it considers necessary from time to time, including, but not limited to, technical, Unitisation, finance sub-committees etc.
- (b) Provide oversight on engagements leading to execution of the governance agreements for the unit by all parties.
- (c) Consider and approve, revise or reject the recommendations of the sub Committees as it relates to duties assigned to them. The deliberations and recommendations of any sub-committee shall be deemed advisory only and shall become binding or effective upon the Parties only when the same shall have been accepted pursuant to a decision of the Unit Steering Committee.
- (d) Endorse final governance Agreement drafts for execution.
- (e) Give directives and time frame for concluding the Unitisation process.

6.2 Technical Committee

This committee shall:

- (a) Agree on data required to be exchanged by the Parties for the purpose of determining the PTP and defining the Unit Area.
- (b) Advise on the TOR, technical methods and procedures for calculating PTP.
- (c) Make appropriate recommendation on technical issues on Unit Area and PTP to the Steering Committee.

Note: The Operator has the responsibility after the execution of the governance agreement to provide all technical work subject to the unanimous approval of the Parties via the Unit operating committee.

6.3 Finance Committee

The Finance Committee shall:

- (a) Review financial records and agree past costs.
- (b) Advise adjustment procedure.



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6.4 Facility Committee

The Facility Committee shall:

- (a) Inspect and take inventory of all producing and shut-in wells, flow station and other facilities.
- (b) Make appropriate recommendations as required.

6.5 Unitisation Sub Committee (Comprising of Commercial and Legal)

This sub-committee shall:

- (a) Superintend over the negotiation and drafting of the respective governance agreements (PUA, UA, UUOA, etc.).
- (b) Coordinate and translate input from Technical & Finance Committees into commercial and legally workable terms.
- (c) Draft Confidentiality Agreement.
- (d) Make recommendation to the Steering Committee on legal and commercial issues

7 PROVISIONAL TRACT PARTICIPATION

7.1 Joint Studies

The joint study by the Parties, which shall be coordinated by DPR, shall determine the Provisional Tract Participation within six (6) months from the Notification Date.

7.2 Determination of Provisional Tract Participation

The calculation of provisional Tract Participations may be based on one of the following:

- (a) Hydrocarbon Initially In Place (HIIP)
 - (i) Stock Tank Oil Initially In Place (STOIP)
 - (ii) Gas Initially In Place (GIIP = FGIIP + SGIIP)
 - (iii) Condensate Initially In Place (CIIP)
- (b) Original Hydrocarbon Pore Volume (OHPV)
- (c) Movable Hydrocarbon Initially In Place (MHIIP) which refers to hydrocarbons which can be mobilised from their original pore space
- (d) Estimated Ultimate Recovery (EUR)
- (e) Remaining Reserves (RR)
- (f) Hybrid (combinations/variations of the options above)

Notwithstanding the above, the Parties may agree other methods and procedures for the calculation of the Tract Participation.



7.3 Determination and Redetermination

The Determination of the initial Tract Participation and the number and timing of Redetermination (if any) shall be agreed by the Parties under the relevant unitisation agreement.

7.4 Single or Multiple Tract Participation (for Oil, Gas or Condensate) - Aggregation

The decision whether or not to have a single or multiple Tract Participation in a unitisation for Oil and gas developments shall be agreed by the Parties under the relevant unitisation agreement.

8 FIELD DEVELOPMENT PLAN FOR THE UNIT

A proposed Field Development Plan for the Unit shall be submitted to the DPR for approval in accordance with Sections 38 and 48 of the Regulations. The proposed Field Development Plan shall be duly signed by all Parties and shall also bear the names of all Fields and Concessions involved.

8.1 Field Development Plan for Green-Green

The Parties involved shall meet, exchange all relevant data, plan and agree on mutually acceptable processes and terms for a Field Development Plan. The planning process will be carried out in conjunction with the DPR. A presentation of the proposed Field Development Plan shall also be made to the DPR.

8.2 Field Development Plan for Brown-Green

- (a) The Parties shall carry out a joint study for the understanding of their common pools before producing a joint Field Development Plan.
- (b) In consonance with the provisions of Section 48 (4) of the Regulations, the Minister shall prepare and enforce a Field Development Plan where the Parties fail to submit a joint Field Development Plan.

8.3 Field Development Plan for Brown-Brown

The Parties shall carry out a joint study for the understanding of their common pools before producing a joint Field Development Plan.

In consonance with the provisions of Section 48(4) of the Regulations, the Minister shall prepare and enforce a Field Development Plan where the Parties fail to submit a joint Field Development Plan.



9 PRE UNITISATION AGREEMENT

- (a) The time frame for concluding a PUA shall be twelve (12) months from Notification Date. A copy of the PUA between the Parties shall be submitted to the DPR.
- (b) Within twelve (12) months from the Notification Date, either Party may inform DPR of a deadlock or dispute in agreeing with the PUA. DPR shall intervene and use its best endeavor to resolve the dispute for the Parties within two (2) months.
- (c) DPR shall invite the Parties to present the progress report on PUA within six (6) months from the Notification Date.
- (d) With respect to Brown-Brown Straddling Fields, the Parties may agree to execute unitisation and unit operating agreement (UUOA), unit agreement and contractor unit operating agreement as the case may be, without first executing a PUA.

10 ALTERNATIVES TO UNITISATION

Where unitisation is not a viable option in the opinion of the Parties, the Director of Petroleum Resources may, in the exercise of powers conferred by Section 44 of the Regulations, give such directives as may, in the opinion of the Director, be deemed necessary to ensure the proper exploitation of Hydrocarbon and to encourage good conservation practices in any Concession and the Concession holder(s) shall comply with any such directions.

11 EXPIRY DATE OF ONE OF THE CONCESSIONS PRIOR TO THE END OF LIFE OF THE UNIT OPERATIONS.

In authorizing Unitisation under the Regulations, the Minister shall consider:

- (a) the unexpired duration of the adjoining Concessions, and
- (b) the expected economic life of the Unitised Development.

In the event that any of the adjoining concessions expires before the end of the economic life of the unitised development and the Minister intends not to renew the affected concession, DPR shall on application by the affected concession holder, recommend to the Minister, in accordance with the Petroleum Act, a renewal of the concession for a further term not exceeding the expected economic life of the unitised development.



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12 DIFFERENT FISCAL REGIMES

In respect of production from a Unit Area, the fiscal regime applicable to each Concessionaire's share of total production shall be the fiscal regime applicable under such Concession.

In respect of production from Reservoirs in a marginal field area within the Unit Area, the fiscal regime applicable to that marginal field area shall be the fiscal regime applicable under the relevant marginal fields legislation.

13 ABUSE and/or NON-CONFORMANCE

Any violation of these Guidelines by a Party(ies) will constitute abuse or non-conformance and shall attract appropriate sanctions as may be imposed by the Minister in accordance with the Petroleum laws of the Federal Republic of Nigeria.

14 INTERNATIONAL/CROSS BORDER UNITISATION

- (a) Cross-border Unitisation is a unitisation that takes place in respect of reservoir(s) underlying two or more coastal States with opposite or adjacent coast or that have a delimited border between them.
- (b) To avoid potential resource claim which may arise where a reservoir straddling the common boundaries of Nigeria and any other State is being explored by a licensee, lessee or concessionaire without recourse to the interest of the other State(s), the licensee, lessee or concessionaire shall immediately inform DPR of such Discovery across the international boundary.
- (c) DPR in collaboration with the Nigerian Boundary Commission and the Nigerian governmental authorities (Attorney General of the Federation, the Minister of Petroleum Resources and any other governmental agency as may be assigned by the Federal Government of Nigeria) will work with the licensee, lessee or concessionaire to achieve an amicable solution to avoid dispute by entering into a co-operative arrangement that ensures the preservation of the "unity of the deposit".
- (d) To achieve this, two Agreements have to be entered;
 - (i) A Treaty between Nigeria and the relevant State(s) which will set out the right and obligations of each state regarding the development and areas of co-operation.
 - (ii) An International Unitisation Agreement between the Nigerian licensee, lessee or concessionaire and the relevant oil company from the other State(s) which to the agreement of the State(s), like selection of Unit Operator or Redetermination of tract participants.



14.1 Treaty

- (a) The purpose of the Treaty is to set out the rights and obligations of the relevant State(s) with respect to the field development and incorporate procedures to minimise conflicts. This Treaty will then form the basis of an International Unitisation Agreement among the various licence holders.
- (b) The Treaty shall amongst other provisions provide for the procedure for selection of the Unit Operator, determination of Tract Participation, ensuring that each company is subject to the fiscal regime of its State.

14.2 International Unitisation Agreement

- (a) Following the signing of the Treaty, the respective operators in the different States will prepare a single development plan and enter into an International Unitisation Agreement which will usually follow the normal pattern in most respects.
- (b) The Nigerian Party shall first secure the approval of the DPR to the development plan before agreeing under the International Unitisation Agreement.
- (c) The International Unitisation Agreement will however be subject to the provisions of the Treaty.
- (d) The International Unitisation Agreement itself will require the approval of the relevant States in order to ensure that it contains the requirements of the Treaty.
- (e) The International Unitisation Agreement shall have a special provision, in the sense that there shall be compliance to the provisions of the Treaty between the Parties.
- (f) Each Party's share of production and costs is usually based on the Tract Participation, regardless of the physical location of the production facilities.
- (g) The Nigerian Party shall pay its tax and royalties in line with the fiscal laws of Nigeria as if its Unit share of production had been produced from its own contract area.
- (h) In the process leading to the execution of the International Unitisation Agreement, the Nigeria Party shall involve the DPR.
- (i) The Nigerian Party is obligated to ensure that the Treaty is not violated.



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- (j) The Nigerian Party shall provide the DPR regular updates and inform the DPR of any potential areas of dispute.
- (k) All obligations under the Petroleum Act that would have been applicable to the Nigerian Party, as if the Party is operating solely in Nigeria, shall be applicable to the Nigerian Party.

Made this 14th day of March, 2019

By Director of Petroleum Resources

A handwritten signature in black ink, consisting of a large, stylized initial 'D' followed by a cursive name.

Signature.....



SCHEDULE 1

LIST OF DATA TO BE EXCHANGED

The following data is to be exchanged between Party(ies) under the supervision of the DPR. Data shall include but not limited to:

(a) Geophysical Data:

- i Seismic data (raw and interpreted)
- ii Acquisition report
- iii Processing reports
- iv Intermediate processing product
- v Stacking and migration velocities
- vi SEG-D data
- vii SEG-Y data (full stack and angle stack)
- viii VSP/Checkshot data
- ix Interpreted time horizon
- x Interpreted depth horizon
- xi Structural maps
- xii Interpretation reports
- xiii Attribute maps
- xiv Coherency/semblance cube
- xv Derivative maps

(b) Geological data:

- i Geological/depth maps
- ii Cross sections
- iii Stratigraphic correlations
- iv Core data
- v Sidewall/conventional core
- vi Ditch cuttings
- vii Mud log data
- viii Sedimentological/biostratigraphic report
- ix Saturation maps
- x Fault maps
- xi Static model
- xii Geochemical analysis report
- xiii Core analysis report
- xiv Isopach maps



(c) Petrophysical data:

- i Well logs (raw and interpreted): Gamma ray, resistivity, porosity, neutron density, sonic, dipmeter, carbon/oxygen.
- ii Hydrocarbon distribution plots
- iii Fluid contacts: OWC, GOC, GWC, OUT, ODT, GDT

(d) Well data:

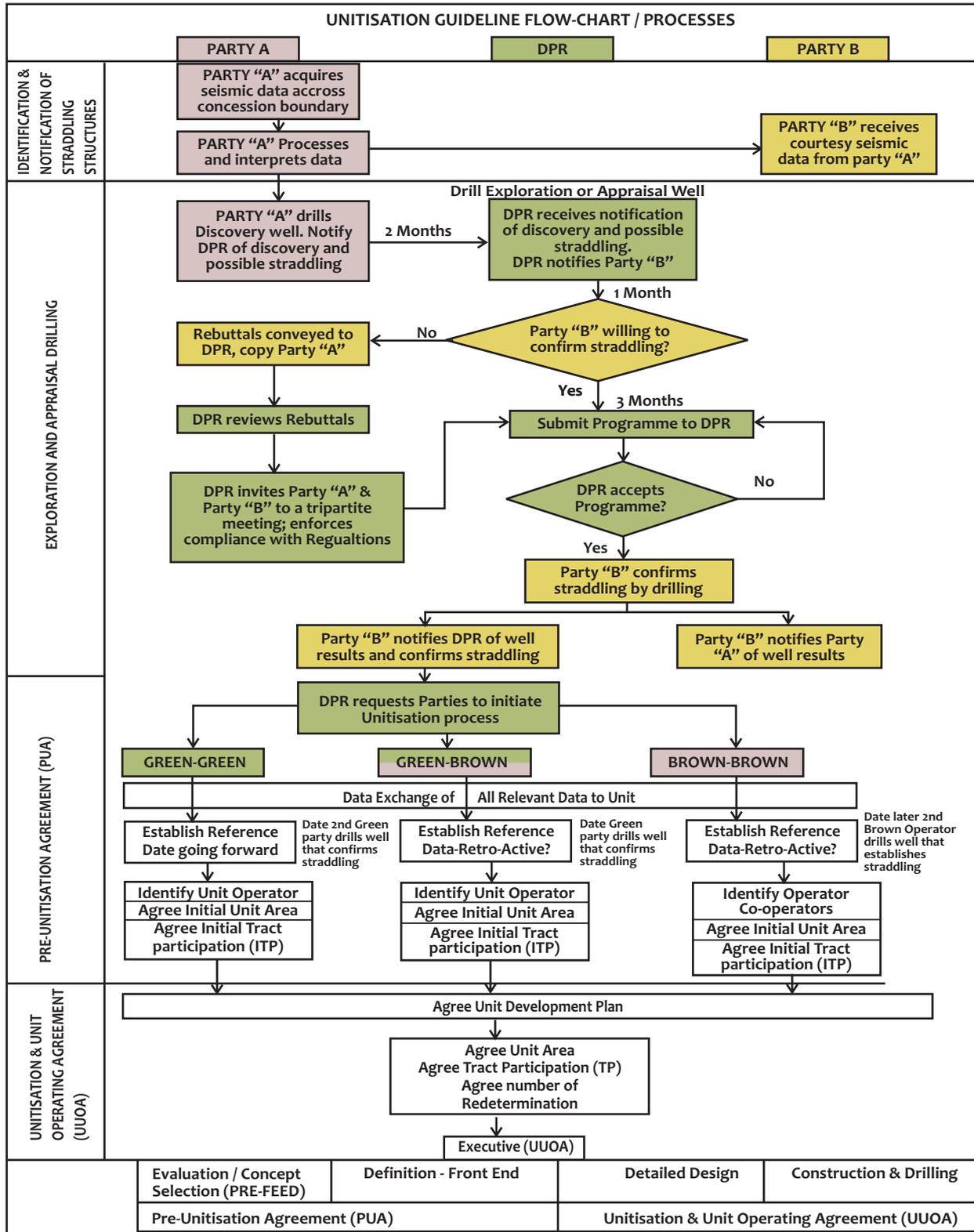
- i Well surface coordinates
- ii Well deviation data
- iii Sand tops and bases
- iv End of well report
- v Well file report
- vi Well history

(e) Petroleum/reservoir engineering data:

- i Core (SCAL) analysis
- ii BHP (static and dynamic)
- iii Dynamic model
- iv Reserve report
- v PVT data and analysis report
- vi Bubble point and dew point pressures (GOR, CGR, FVF, RSI, Compositional analysis)
- vii Production data (oil rate, gas rate, BSW, GOR, injection rate)
- viii Well status diagram
- ix Crude assay
- x Material balance and nodal analysis
- xi Well test data
- xii Pressure transient report



Appendix A





Appendix B

Section 48 of the Petroleum (Drilling and Production) Regulations

48. (1) If at any time during the term of a licence or lease —
- (a) the Minister, after consultation with the licensee or lessee (referred to in this regulation as "the grantee"), is satisfied that the relevant area or any part thereof forms part of a single geological petroleum reservoir (referred to in this regulation as "the oilfield") in respect of other parts of which any other licence or lease is in force, and that the oilfield is susceptible of being developed as a unit in accordance with good oilfield practice; and
 - (b) the Minister considers that it is in the interests of Nigeria, the grantee and the licensees or lessees of any other part of the oilfield (those licensees or lessees being referred to in this regulation as "the other parties") in order to secure the maximum ultimate recovery of petroleum that the oilfield should be worked and developed as a unit in co-operation by all those who hold a lease or licence over any part thereof, paragraphs (2), (3) and (4) of this regulation shall apply.
- (2) The grantee shall, upon being so required by the Minister by a notice in writing specifying the other parties, co-operate with the other parties in the preparation of a scheme (referred to in this regulation as 'the development scheme') for the working and development of the oilfield as a unit by the grantee and the other parties in co-operation, and shall jointly with the other parties submit the development scheme for the approval of the Minister.
- (3) The said notice shall contain a description, by reference to a map, of the area in respect of which the Minister requires the development scheme to be submitted for his approval and shall state the period within which the development scheme is required to be so submitted.
- (4) If the development scheme is not submitted to the Minister within the period limited in that behalf by the said notice, or if the development scheme on being submitted in pursuance of paragraph (3) of this regulation is not approved by the Minister, the Minister shall himself prepare the development scheme in a manner which in his opinion is fair and equitable to the grantee and the other parties.
- (5) When the development scheme has been —
- (a) submitted under paragraph (3) of this regulation and duly approved; or
 - (b) prepared by the Minister under paragraph (4) of this regulation, the grantee and the other parties shall perform and observe all the terms and conditions thereof.



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Appendix C

(ii) MEMBERS OF THE COMMITTEE ON THE REVIEW OF GUIDELINES FOR UNITISATION IN NIGERIA HELD ON MARCH 5-10, 2018.

The review of 2008 Guidelines for Unitisation in Nigeria was initiated by Mr. E. Amadasu of the Department of Petroleum Resources. The underlisted personnel drawn from the Industry reviewed the existing 2008 Guidelines for Unitisation in Nigeria with a view to developing a more robust Guidelines given recent industry trends and appropriate recommendations to close the observed gaps in the existing guidelines.

S/N	NAME	COMPANY
1	Onyebuchi Sibeudu	DPR
2	Pat Maseli	DPR
3	Olusanya Bajomo	DPR
4	Abdu-Misau Abba	DPR
5	Enorense Amadasu	DPR
6	Joseph Tolorunshe (PhD)	DPR
7	Okiemute Akpomudjere	DPR
8	Juliet Akra	DPR
9	Victor Georgeson	DPR
10	Ahmad Abdullahi	DPR
11	Amba Ndoma Egba	DPR
12	Nuhu Habib	DPR
13	Mohammed Allamin	DPR
14	Marcel Amu	NAPIMS
15	Latifat Yusuff	NAPIMS
16	Olatunde Oladebo	NAPIMS
17	Musbahu Habib	NAPIMS
18	Babajide Adetola	NAPIMS
19	Eyeoyubo Ebi	NAPIMS
20	Chuks Onwunali	Aiteo
21	Dieb Hammami	Aiteo
22	Ndubisi Ifeozo	Aiteo
23	Sheriff Oluwo	Aiteo
24	Joseph Oni	Aiteo
25	Princess Ediemu-Chukwumah	Chevron
26	Olurotimi Idowu	Chevron
27	Reuben Ogbon	Chevron
28	Asiyah Arisekola-Alao	Eroton
29	Mohammed Metteden	Eroton



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30	Emeka Onyeka	Eroton
31	Dunstan Ananyi	ExxonMobil
32	Bayo Sofidiya	ExxonMobil
33	Patricia Ochugbu	ExxonMobil
34	Charles Ndiomu	ExxonMobil
35	Eberechukwu Ogbonna	ExxonMobil
36	Ekaette Umoren	ExxonMobil
37	Dapal Alfred	NAOC
38	Pius-Milverton Ogunjiofor	NAOC
39	Esi Orogare	NAOC
40	Maryam Tijani	Neconde
41	Dare Agbelese	Neconde
42	Olaniyi Ojo	NewcrossEP
43	Abiodun Ogunjobi	NewcrossEP
44	Abubakar Arabi	NPDC
45	Samaila Idi Ardo	NPDC
46	James Olatomiwa	NPDC
47	Mendos James	NPDC
48	Henry Ijomanta	NPDC
49	Idris Taiwo	Oando
50	Michael Ezeh	Oando
51	Solomon Agba	Oando
52	Tomi Akpeneye	Oando
53	Babafemi Onasanya	Oando
54	Ena Agbro	Oando
55	Asime Bala	Oriental Energy Resources
56	Anthony Aniekwena	Pillar Oil
57	Uche Nwangboje	Pillar Oil
58	Alfred Toluhi	Pillar Oil
59	Bode Matthew	Sahara Energy
60	Ademola Fashiku	Seplat
61	Presline Temisa	Seplat
62	Allison Deji Aliu	Seplat
63	Ese Ozoemena	Seplat
64	Collins Onyeukwu	Seplat
65	Yemi Solar	SPDC
66	Funto Annam	SPDC
67	Ehizogie Olotu	SPDC
68	Frederick Akalamudo	Total
69	Odalo Addeh	Total
70	Olubukola Daniel-Durotiwon	Total



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(ii) MEMBERS OF THE COMMITTEE ON THE HARMONIZATION OF THE REVIEWED 2008 GUIDELINES FOR UNITISATION IN NIGERIA HELD ON JANUARY 29 - 31, 2019.

The Director, Department of Petroleum Resources constituted the Committee to harmonize the recommendations of the enlarged Committee and develop the revised 2008 Guidelines for Unitisation in Nigeria document for legal drafting.

S/N	Name	Organization
1	O. Akpomudjere	DPR
2	J. E. Akra (Mrs.)	DPR
3	V. U. Georgeson	DPR
4	M. Allamin	DPR
5	Y. M. Shokoya (Mrs.)	DPR
6	Babajide Adetola	NAPIMS
7	L. F. Yusuff (Mrs.)	NAPIMS
8	Pius Ogunjiofor	NAOC
9	Ehizogie Olotu (Mrs.)	SPDC
10	Solomon Agba	OANDO

(iii) MEMBERS OF THE LEGAL DRAFTING COMMITTEE

S/N	Name	Organization
1	J.A. Tolorunse (PhD)	DPR
2	O. Akpomudjere	DPR
3	A.O. Okwah	DPR
4	Q.T. Nwaha	DPR
5	E. Bassey	DPR