

TRANSMISSION REHABILITATION AND EXPANSION PROGRAM

(Strategy for Rehabilitation and Expansion to Achieve
Grid Stability and Reliability)

PDO

***“To Rehabilitate, Stabilize, Provide Necessary Flexibility, Redundancies
and Expand the Wheeling Capacity of the Grid to 20,000MW”***



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Introduction

Transmission Company of Nigeria (TCN) is the only company out of the 18 successor companies unbundled from the former PHCN that is not privatised. A management contract of four years was signed between FGN and Manitoba Hydro International (MHI) to provide technical and managerial expertise, to improve the operational efficiencies and overall performance of the company. The MHI contract ended on August 31, 2016 without achieving its objective and government in its wisdom did not extend it further.

The Deputy Managing Director under MHI took over the management of the company after the departure of MHI on August 31, 2016 and led the company until February 1, 2017 when a new management led by Mr UG Mohammed was appointed to take over the leadership of TCN. TCN Management in February 2017, established the Transmission Rehabilitation and Expansion Program (TREP) which seeks to establish an effective and well-motivated workforce as well as expand the Grid.

Transmission Rehabilitation and Expansion Program (1st Phase)

Transmission Rehabilitation and Expansion Program (TREP) is a strategy which is expected to rehabilitate and expand the nation's transmission infrastructure in order to stabilize the grid for optimum performance, in line with international best practices, through massive investment. TREP is also expected to expand the capacity of the Transmission Grid to 20,000MW by 2021.

Under TREP, all uninstalled transformers all over the country will be installed through in-house capacity. Lines constraints noted all over the country especially those that supply substations whose total installed transformer capacity are more than that of the lines will be upgraded through in-house capacity. Aluminium conductors and other equipment for the line upgrade would be procured from NEGIP, FGN or IGR.

TREP seeks to reduce system instability through the procurement of functional SCADA/EMS, ensuring frequency control, provision of adequate spinning reserve, installation of relays and ensuring its effective coordination. TREP also seeks to establish functional organizational structure and provide adequate man power with requisite skills and adequate motivation (incentive) to drive the reform and manage the assets under their care.



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Management will propose an optimal organisational structure for TCN within a short period and recruit a consultant to review the proposal. The management structure left by MHI consists of 46 General Managers and 134 Assistant General Managers against 10 General Managers and 11 Assistant General Managers it inherited when it took over the management of TCN in 2012.

TCN requires significant amount of financial resources to implement TREP but unfortunately, it has the lowest tariff in the Nigerian Electricity Market (NEM). The problem is compounded by the fact that even with the lower tariff, only less than 40% is usually paid because of the poor liquidity in the Market. The company has aggressively sought the expansion of its revenue base through pursuing appropriate tariff from NERC, increasing its receipt from the market, and optimising all its revenue sources.

Given the paucity of funds in NEM currently, it has become difficult to use any form of PPP to massively rehabilitate and expand the network. TCN is therefore left with only one option, which is to seek the support of donor agencies while pursuing the options of expanding its revenue source through regular sources. Through collaboration with the Federal Ministries of Power, Works and Housing and Finance, TCN has engaged donor agencies for support.

Program Development Objective

The Development Objective (DO) of the 1st Phase of Transmission Rehabilitation and Expansion is as follows:

“Rehabilitate and Expand the Grid, to Stabilize, Provide Necessary Flexibility, Redundancies and Expand the Wheeling Capacity to 20,000MW”

To achieve the DO, TCN needs to achieve the following four milestones; System Frequency Control; adequate Spinning Reserve, functional Supervisory Control and Data Acquisition (SCADA) as well as Critical Investment in Lines and Substations

1. ***System Frequency Control*** basically refers to the Management of the speed at which turbine generators run at a given time. This is necessary because the National



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Demand (aggregate of all the loads taken by DISCOs and other class of customers connected to the Grid) is not constant. The automatic monitoring and controlling of speed of generators in response to changes in demand is called "**Governor Control**". In June 2017, TCN achieved a Frequency Control of between **49.50Hz and 50.50Hz**, which is first of its kind in the last 20 years, and this achievement has been sustained. TCN also established a strategy for achieving the WAPP standard frequency control of **49.80Hz and 50.20Hz** and is waiting for the appropriate time to implement it.

2. Provision of Adequate Spinning Reserve. At present, the Spinning Reserve of TCN as recorded on the daily load broadcast is either **40MW or 0**. With a Generation of between **4,500 to 5,000MW** the expected standard spinning reserve requirement is 450MW representing 10%. Spinning Reserve is an auxiliary service provided in grid management to meet huge shock that may lead to system collapse.

Management of TCN established a committee under the leadership of the Current Head (ISO) with membership from GENCOs to find out the reasons why generating companies contracted to provide spinning reserve were not providing them. The Committee established that the tariff for spinning reserve was not adequate and came up with suggestions which was forwarded to NERC in 2017.

3. Provision of functional Supervisory Control and Data Acquisition (SCADA). SCADA is a system that operates on coded signals over a communication channel. It is a tool for system operations and monitoring for effective grid management. NEPA/PHCN/TCN attempted to procure SCADA/EMS/Telecoms three times which were not entirely successful. The current SCADA/EMS was financed by the World Bank but it can only see about 40% of the network with several deficiencies. On assumption, the management in February 2017, established a SCADA committee with the objective of finding out why three attempts earlier made to establish functional SCADA failed.

4. Critical Investment in Lines and Substations. Under this component, TCN plans to rehabilitate and expand transmission lines and substations across the country consistent with international standard of N-1 stability criteria. TCN is using in-house capacity to install abandoned transformers and their associated key



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equipment, complete transmission lines to various substations and also assist contractors to complete their contract or take over cancelled contracts, to ensure they are completed within record time. Under the program, TCN reorganises, renegotiates and looks for funding to ensure the completion of some of the existing contracts.

TCN Engagement with Donor Agencies on TREP

TCN commenced engagement with donor agencies after Federal Ministries of Power and Finance sent funding request for TREP to them. However, most of them raised the issue of poor implementation capacity of TCN. After reviewing the causes of poor implementation of donor projects by TCN, the following weaknesses were discovered:

1. There was lack of oversight function and necessary supervisory control over donor financed projects. This was partly caused by the donor agencies who encouraged unnecessary independence of the Project Management Unit (PMU) in TCN, and yet failed to provide necessary supervision. This led to slowed implementation of projects and wastages.
2. Donor agencies response to procurement documents forwarded to them were extremely slow. In many instances the documents stayed for months before the usual response of poor quality is received from them. The implementation of TREP will require all donor agencies to strengthen their capacities in order to deliver on the program timely.
3. Projects were implemented in silos without coordination between the donor agency funded projects and those funded by TCN through either internally Generated Revenue (IGR) or Federal Government (FGN) budget.
4. Packaging of projects were not usually done with the objective of attracting the best players in the industry. Interestingly, most high voltage power transmission equipment are not manufactured in Nigeria. Therefore economy of scale and proper packaging became central issues for participation of big players in procurement.
5. Most Original Equipment Manufacturers (OEMs) do not want to be involved



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in the installation of their equipment inside Nigeria, yet they are interested in selling them to the nation. To achieve this, they normally enter into joint venture agreement with local partners that have little or no experience in such assignment. In most cases, they ship the equipment and get paid through Letters of Credit (LCs), but their local partners do not have the capacity to clear the goods from the ports, let alone install the equipment.

6. The poor capacity of the local contractors/joint venture partners, coupled with failure of TCN to provide import duty exemption waivers (IDEC) on a timely bases, contributed to the accumulation of several stranded containers in the ports and consequently, abandoned projects.
7. The best and most experienced project staff were not participating in projects implementation in the past. There was also little interaction between TCN Management and PMU that is involved in daily implementation of projects.
8. There was no efficient performance monitoring scheme to monitor and bench mark the performance of the project management units and its key staff involved in project implementation.
9. Implementation of projects was over centralised in the Headquarters in Abuja. This had significantly affected speed of implementation and quality of the projects. This is natural because the Regional Managers and their staff who were closer to the project sites were excluded in the projects implementation.

TREP has been designed to address most of the risks noted above and has been designed to provide the following:

1. TCN Management has started providing complete and effective oversight and supervisory control over all donor funded projects. This has significantly improved the pace of implementation. A good example of such improvement is found in the significant increase in the disbursement percentage of NEGIP



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which has increased tremendously as at November 2017.

2. The projects will still be implemented through stand-alone PMUs. However, TCN will supervise and control their implementation. TREP will be implemented in a coordinated manner, so that there is synergy between the various projects and those financed through FGN budget and TCN's IGR. This coordination will be led by the General Manager (Program Coordination), for all PMU projects.
3. TCN will require every donor agency to sign Service Level Agreement (SLA) with it. The SLA will specify responsibilities of each party with respect to timelines, response to document submitted for clearance and response to comments and clarification requested by donors. Breach of the agreement will be formally reported accordingly through appropriate channels in TCN and to the donors for further necessary action.
4. TREP is packaged to attract the best and most qualified contractors. The packaging would be in respect of size and composition that will make it attractive enough for bidders to be interested in the projects.
5. Major contracts will be procured through two-stage bidding processes starting with pre-qualification. The qualification criteria will be raised to attract only the best in the industry. Other risks associated with joint ventures and other forms of association will also be addressed in each pre-qualification document.
6. TCN has strengthened the Expediting Department and moved it from Procurement to the Finance and Account Division. The objective of the reorganization is to ensure prompt and effective processing that would lead to zero payment of demurrage going forward. This is expected to be done by ensuring prompt processing of duty waivers and effective collaboration between the units of TCN. Henceforth duty waivers processing would commence immediately contracts are signed, and no importer would be



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- allowed to ship their equipment where duty waivers are still pending.
7. The selection of Key staff that will implement TREP was done through merit-based method. There was internal adverts, interviews and sometimes written tests.
 - a. All the project managers were required to sign performance contracts with the General Manager (Program Coordination).
 - b. Monitoring and Evaluation, Audit, Environmental and Social Safeguard will be based on common framework and will be domiciled under the GM (Program Coordination).
 8. Key aspects of project implementation will be ceded to the nine regional offices across the country. Projects are packaged according to the regional offices. The selection of the regional project coordinators was also made through merit-based method.
 9. To reduce the length of time usually spent between project conception, planning and implementation, TCN will request donor agencies participating in TREP to accept the use of advanced procurement.

The following development partners have indicated their willingness to support TCN with various projects to be implemented under the program (TREP):

1. ***Nigeria Transmission Expansion Project (AfDB)***-\$410 Million will build three 330kV quad lines (Alaoji-Onitsha, Delta Power Station-Benin and Kaduna-Kano). The project will also build two 330kV Substations in Zaria and Kaduna and three 132kV Substations at Rigasa, Jaji and Kakau.

The Transmission Expansion Project will support the expansion of transmission network in the North East geo-political zone which has the worst transmission infrastructures and development index in Nigeria. The main cause of the deteriorating development index is poor access to power



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supply. The closest generation station to the North East geo-political zone is Shiroro which is more than 1,000km distance to many locations in the zone. The distance, coupled with poor transmission network, significantly compounded the energy poverty development index of the North East.

2. ***Nigeria Electricity Transmission Access Project (World Bank)***-\$486 Million will support the rehabilitation and reinforcement of existing (brown field) substations and lines. The project will be implemented throughout the country. The project will also support the supply and installation of SCADA/EMS and consultancies that will support PPP projects in TCN in future among others.
3. ***WAPP North Core Transmission Project (World Bank)***-\$29 Million is intended to build 330kV DC 62KM line between Birnin Kebbi and Kamba, the Border between Nigeria and Niger Republic. This is the Nigerian component of the North Core Transmission project which will connect Nigeria, Niger, Benin and Burkina Faso on 330kV DC line. The four countries have agreed to domicile the project in Nigeria.
4. ***Lagos/Ogun Transmission Infrastructure Project (JICA)***-\$200 Million is expected to provide power supply to this part of the country that is increasingly becoming the most industrialized part of Nigeria. The area includes; Arigbajo, Ogijo, Redeem, Mountain of Fire, and New Agbara up to Badagry. The project includes 330kV, 132kV Substations and Lines and would provide the basis for evacuation of new IPPs springing up between Lagos and Ogun states. The new Nigeria-Benin 330kV DC transmission line would also take supply from this project.
5. ***Abuja Transmission Ring Scheme (AFD)***-\$170 Million will construct five new substations in Abuja and bring a new supply route through Lafia in Nasarawa State. This brings to three 330kV supply routes to Abuja: Ajaokuta, Shiroro and Lafia. The new substations to be built in Abuja are 330kV



substations in Apo and Lugbe and 132kV Substations in Lokogoma, Gwarinpa and Kuje.

- 6. Northern Corridor Transmission Project (AFD & EU)**-\$274 Million seeks to build 330kV DC from Kainji to Birnin Kebbi, reconstruct one of the 330kV SC from Shiroro to Abuja into 330kV quad line and build 330kV DC from Katsina-Daura-Jogana and end in Kura (this would evacuate the Jigawa Solar IPP Complex and EU has indicated interest with possible grant support of €25Million). The project will build four 330kV substations in Sokoto, Bauchi, Jogana and Daura, and will also build 132kV substations in Lambata, Argungu and Birnin Gwari.

Upgrading TCN Human Capacity

No utility can successfully transform itself relying on external labour. It is also known that donor finance projects are inflexible and cannot respond to emergency needs; hence there is need for a blend of in-house capacity for less complex substation and Lines construction with the implementation of large and complex contracts which will be executed through donor financed programs. TCN intends to build on the success of the several in-house transformers installations done all over the country since 2017.

Reconductoring Lines

The wheeling capacity of TCN could easily be expanded by at least 2,000MW by removing 132kV lines constraints all over the country. Several substation reinforcement including those done under the donor financed projects were done with reference to the capacity of the lines. Therefore, TCN intends to re-conductor several 132kV transmission lines that have constraints using in-house capacity. TREP is strengthening the weakest 330kV transmission line corridors through new lines and reconstruction. Some 330kV and 132kV lines will be re-conducted using modern higher carrying capacity conductors.

2nd Phase TREP (for 25,000-30,000MW)

There will be a second phase of TREP that will expand and take the Grid capacity to between 25,000 and 30,000MW in the next seven years. 2nd Phase of TREP will also



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provide the needed lines to evacuate the 3,050MW Mambila Hydro Electric Dam Project whose contract agreement was signed in 2017. The Mambila contract provided for the construction of two number 330kV transmission lines; Mambila-Jalingo and Mambila-Markurdi 330kV transmission lines.

To effectively evacuate Mambila, there is need for additional corridor. TCN intends to build a new 330kV lines and associated substations to enable it effectively evacuate Mambila, and create another transmission loop that will further strengthen the Grid and provide additional flexibility and redundancy as follows; Calabar-Ikom-Ogoja-Mambilla 330kV DC line, Kano-Dutse-Azare-Potiskum – Damaturu 330kV DC Line, Damaturu-Biu-Gombe-Yola-Jalingo 330kV DC Line and Ajaokuta-Ayangba-Makurdi 330kVDC line.

To complete the loop, TCN will build Ughelli- Okpai 330kV Line, Ughelli-Port Harcourt 330kV DC line and Sokoto-Katsina 330kV DC line, and several 132kV DC lines and associated substations across the country. Under the 2nd phase also, TCN will execute its first contractor finance project and also close the loop in Lagos.

TCN 1st Contractor Finance Project

Given the significant level of generation presently coming up around Benin, there is need for bigger corridor for evacuation of power to Lagos. TCN intends to consider the first to be built using contractor finance; the 330kV line between Benin TS and Benin North to be reconstructed into 330kV quad line and a new 330kV quad line between Benin North and Omotosho. TCN intends to negotiate with the contractor doing Omotosho-Erukun to increase the line capacity by at least 100%. The Benin-Omotosho 330kV quad line will be complemented by the Omotosho-Epe-Aja 330kV DC line.

Closure of the 330kV Transmission Loop in Lagos

TCN intends to close the loop in Lagos by upgrading the existing Alagbon-Ijora-Akangba 132kV DC line to 330kV DC line, and also constructing a 330kV Substation at Ijora. TCN will build a 132kV DC line underground from either Lekki or Alagbon 330kV Substations to supply Atlantic City in Lagos.

TCN will collaborate with Government of Japan to rehabilitate several Substations in Lagos; among them are Apapa, Akangba, Isolo, Ikeja West, Ota and Ojo. TCN will re-



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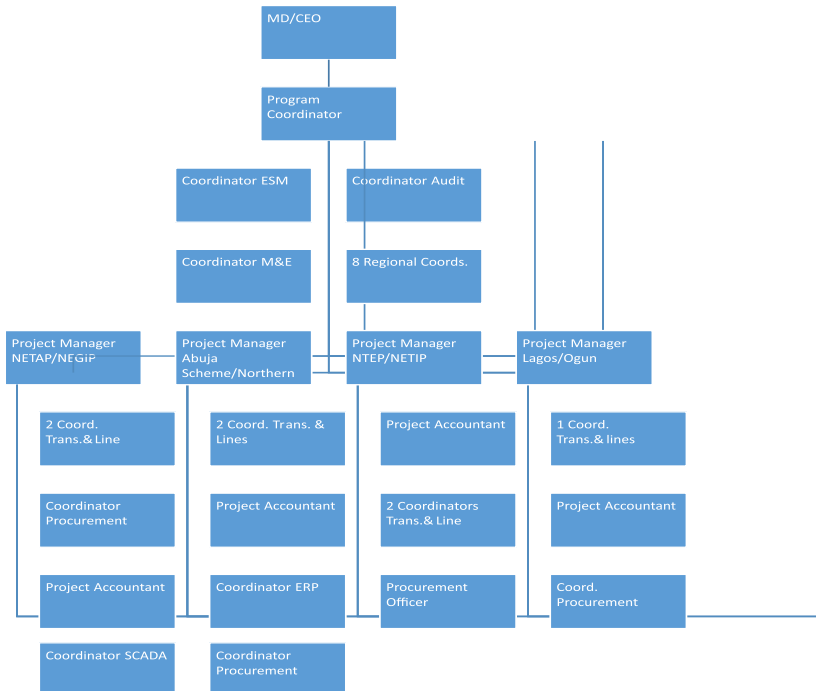
conductor the Olorunshogo-Ikeja West DC line using the new Thermal Resistant Aluminium Conductor Steel reinforced with GAP to give it the required capacity.

TCN Collaboration with WAPP

The Grid will further be supported by the following WAPP transmission lines; New Agbara-Sekete 330kV DC line, Median Backbone (Shiroro-Zungeru-Kainji-Parakuo (Benin)-Northern Togo-Northern Ghana 330kV DC line, and the North Core (330kV DC line with associated substations that would connect Nigeria, Niger, Benin and Burkina Faso).

The TCN collaboration with WAPP will not only improve the energy exchange in the West African Region, but will also expand and provide flexibility as well as stability for TCN. The Median Backbone for example will strengthen the capacity of TCN to deliver power within Nigeria, in addition to supporting the international power trade exchange in this part of West Africa.

Organizational Chart of TREP





Terms of Reference of TREP Key Staff

Program Coordinator

The Program will be supervised by a Coordinator who will report directly to the CEO. The scope of the work of the Program Coordinator shall include coordination of the performance of the entire Program; review and resolving staffing and capacity needs of the project management units; review the performance of the project managers in line with their key performance indicators (KPI); supervise the monitoring and evaluation, internal audit, and annual audit of the project management units; oversee environment and social compliances of the projects through a dedicated ERSU officer; resolve project management issues that are beyond the control of the project management unit; perform other functions as may be assigned by the Managing Director.

Coordinator Monitoring and Evaluation (M&E)

The M&E Coordinator shall reside in the HQ of TCN and will report to the Program coordinator. The M&E Coordinator shall be responsible for the design of result based M&E frame work for the Program and ensure its implementation, shall be responsible for ensuring that baseline data are sourced before full implementation of the Program; shall render monthly and quarterly M&E report in liaison with contract implementation coordinator and Coordinators of the sub-projects at PMUs, shall advise management on the performance of contracts signed with each key staff in the implementation chain and perform other functions as may be assigned by the Program Coordinator.

Coordinator Audit

The Coordinator Audit shall be responsible for designing and implementing risk based audit scheme for the entire program; ensure strict application to internal control and segregation of duties in the Program; ensure that all the rules and guidelines of the donor agencies and FGN are observed at all times in the implementation of the program. He/She shall advise management on the best procedure for safe-guarding assets of the program at all times and perform other functions as may be assigned by the Program Coordinator, as well as coordinate the functions of the audit officers in the four projects.



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Coordinator Environmental and Social Management (ESM)

The ESM Coordinator shall be responsible for the design of environmental and social management frame work for the program, and ensure its implementation. He/She shall also be responsible for ensuring compliance with all environmental and social safeguards in the implementation of the Programs, shall render monthly and quarterly reports on environment and social management policy and ensure its implementation, advise management on the implementation of environment and social safeguards in the Program and perform other such functions as may be assigned by the Program Coordinator. The Coordinator ESM shall coordinate the work of the ERSU officers in the four projects.

Project Managers

There will be four Project Managers heading the four implementation units (PMUs). The scope of work of the project managers shall include the performance of the day to day management of the project management units comprising of multi-disciplinary personnel; supervise the work of coordinators and ensure the execution of the project in line with the project development objective; communicate with the World Bank, Federal Ministry of Finance and other relevant agencies on behalf of TCN; oversee the preparation and execution of procurement of all contracts and shall be responsible for the performance of all contracts under the project; shall be responsible for, submission of quarterly progress report, annual and adhoc reports to TCN Management, World Bank, Agence Francaise De Developpment, African Development Bank or JICA respectively; perform other functions as may be assigned by the Program Coordinator or the Managing Director.

Coordinator Substation and Lines

There shall be a Coordinator Substations and Lines for each of the four projects (each coordinator shall have a maximum of two staff under him). The World Bank, AFD and IsDB financed components shall, due to their sizes, have two Substations and Lines Coordinators. The scope of work of the Coordinator Substations and Lines includes; to coordinate the planning, design and procurement of all substations and lines contract packages; coordinate the preparation of bidding documents and bidding processes of substations and lines; coordinate the processes leading to contract effectiveness; coordinate with the implementation substations in conjunction with the project



coordinators in the regions; perform other functions as may be assigned by the Manager PMU.

Project Accountant

There shall be four Project Accountants, one for each project (a project accountant shall have a maximum of three staff under him). The project accountant shall be responsible for the financial management of the project; shall prepare financial monitoring reports and all financial reports as may be required by each specific donor agency; shall prepare disbursement requests and ensure adequate liquidity of the projects; ensure strict application of internal control and segregation of duties to ensure safeguard of assets; shall be responsible for opening of LC and commercial expenditure of the project. (TCN shall ensure no demurrages are incurred by filing duty exemptions timely); shall be a member or nominate a member in all procurement evaluation committees to ensure strict adherence to qualification criteria in a bidding document; perform other functions as may be assigned by the Manager PMU.

Coordinator Procurement

There shall be one Procurement Coordinator for each project. The procurement officer shall be responsible for the procurement of all the project components; develop procurement plan and update it from time to time; prepare bidding document and RFP for the project, launch the procurement process and answer all queries on procurement processes; ensure strict compliance with procurement rules and guidelines of the respective donor agency in addition to the Nigeria Public Procurement Act 2007; shall be the secretary or shall assign the secretary of all procurement evaluation committees; perform other functions as may be assigned by the Manager PMU. The Coordinator Procurement shall have not more than two reporting staff.

Coordinator SCADA/EMS/Telecomms

NETAP (World Bank financed) has SCADA component, hence the need for a coordinator. Coordinator SCADA shall have not more than one staff reporting to him. The SCADA coordinator shall coordinate with the committee set up to review the past performance of SCADA implementation; coordinate the consultancy for the SCADA



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scope in consultation with SCADA review committee; coordinate the planning, designing and procurement of SCADA; coordinate the preparation of bidding documents and bidding processes of SCADA; coordinate the processes leading to SCADA contract effectiveness; coordinate with the SCADA implementation team in all the regions; perform other functions as may be assigned by the Manager PMU from time to time.

Coordinator Enterprise Resource Planning (ERP)

The project financed by AFD has ERP component to be implemented across TCN. The procurement process was halted by the Ministry, and finally terminated, pending the development of a clear road map for its successful implementation. TCN established an ERP implementation committee whose primary objective is to establish the reasons behind the previous failures at the implementation of MIS. The scope of work of the Coordinator ERP shall include coordination with the committee set up to review the past performance of ERP implementation; coordinate the consultancy for the ERP scope in consultation with ERP review committee; coordinate the planning, designing and procurement of ERP; coordinate the preparation of bidding documents and bidding processes of ERP; coordinate the processes leading to ERP contract effectiveness; coordinate the implementation of ERP and perform other functions as may be assigned by the Manager PMU from time to time. The Coordinator ERP shall have one reporting staff.

Regional Program Coordinator

Each region will be assigned a Regional Program Coordinator who will coordinate the implementation of the program in the region. The Regional Coordinator will coordinate progress meetings and adhoc meeting as may be required to fast track project implementation. He/She shall equally coordinate the performance of the contract, seek clarification from contractors, liaise with the Coordinator of substations and lines in the PMUs, and supervise Program Consultants in the region. The Regional Coordinator shall report to the Regional General Manager.

Environmental & Social Management (ESM) Officer

Each project shall have an Environmental and Social Management Officer who will be responsible for environmental and social safeguards of the project. The ESM Officer



shall have dual reporting lines; administratively to the Project Manager while functionally he/she reports to the Coordinator ESM.

Audit Officer

Each project shall have a Project Audit Officer who shall be responsible for risk-based audit of the project. The project auditor shall have dual reporting lines; administratively to the Project Manager while functionally he/she reports to the Coordinator Audit.

Project Establishment

Office of the Manager

1. 1No. Auditor
2. 1No. Environment and Social Officer
3. 1No. Secretary
4. 1No. Clerk
5. 1No. Driver

Coordinator Substation & Lines

1. 2.No Engineers

Coordinator Procurement

1. 2 No Procurement officers
2. 1 No Procurement filing Clerk

Project Accounts Office

1. 3 No Accounts Staff

SCADA Coordination Office

1. 1 No Engineer

ERP Coordination Office

1. 1 No. IT Staff

Regional Program Coordination office

1. 1 No Engineer



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Role of Various TCN Offices

Corporate Headquarters

TCN Management is expected to provide general oversight over the implementation of the Transmission Rehabilitation and Expansion Program. Management shall ensure that the proper monitoring and evaluation of the projects are carried out and the result used to benchmark the performance of Project Management Unit. Management shall also coordinate relationship between the projects and Ministries of Power and Finance, and other relevant MDAs. Management shall ensure audit of the projects, ensure environmental and social management of the projects.

Project Management Units (PMU)

Undertakes the procurement of all components of the projects; coordinates the implementation of the project at the Regional Office; makes payment for all project activities and consultants as certified by the Regional Offices, establishes and monitors Letters of Credit; coordinates the procurement and implementation of specialised activities like SCADA, ERP and recruits Consultants for the implementation of contracts at the Regional Offices.

Regional Offices

The Regional Office under the TREP will be in charge of the day-to-day implementation of contracts. Each Regional Office shall have a contract implementation coordinator.

The coordinator's duties includes: coordinating the daily implementation of contracts, coordinating progress and mandates of meetings and submitting regular meeting and progress reports to the Project Management Office as well as the office of the Regional General Managers. Supervising the daily performance of consultancy service recruited to support implementation of projects/contract.



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Key

AFD	Agence Francaise De Developpement
AfDB	African Development Bank
EMS	Energy Management System
ERP	Enterprise Resource Planning
EU	European Union
FGN	Federal Government of Nigeria
IGR	Internally Generated Revenue
IsDB	Islamic Development Bank
JICA	Japan International Cooperation Agency
LC	Letter of Credit
MHI	Manitoba Hydro International
OEM	Original Equipment Manufacturer
NEGIP	Nigeria Electricity and Gas Improvement Project
NEM	Nigeria Electricity Market
PHCN	Power Holding Company of Nigeria
PMU	Project Management Unit
PPP	Public Private Partnership
SCADA	Supervisory Control and Data Acquisition
TCN	Transmission Company of Nigeria
TREP	Transmission Rehabilitation and Expansion Program
WAPP	West African Power Pool





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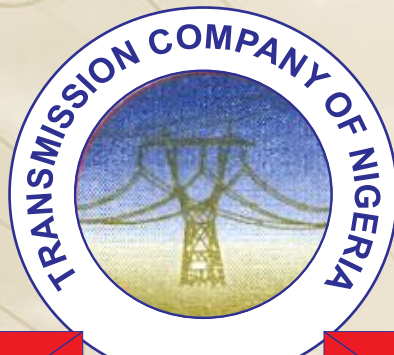
2X60 MVA, 132/33kV

TRANSMISSION SUBSTATION, ODOGUYAN, LAGOS STATE



60MVAR CAPACITOR BANK,

APO TRANSMISSION SUBSTATION, FCT ABUJA



TCN