INSTITUTIONAL, REGULATORY AND COOPERATIVE FRAMEWORK MODEL FOR THE NILE BASIN POWER TRADE

DELIVERABLE 15: COMPREHENSIVE FINAL REPORT

PREPARED FOR:

NILE BASIN INITIATIVE

" TO ACHIEVE SUSTAINABLE SOCIO-ECONOMIC DEVELOPMENT THROUGH THE EQUITABLE UTILIZATION OF, AND BENEFIT FROM, THE COMMON NILE BASIN WATER RESOURCES "

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INSTITUTIONAL, REGULATORY AND COOPERATIVE FRAMEWORK MODEL FOR THE NILE BASIN POWER TRADE

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ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AFC	Available Flowgate Capability
ARR	Auction Revenue Rights
BA	Balancing Authority
CAT	Curtailment Adjustment Tool (in SPP)
CEB	Communauté Electrique du Benin
CEM	Common Energy Market
CIE	Compagnie Ivoirienne d'Electricité
CIS	Commonwealth of Independent States
CoAG	Council of Australian Governments
CR	Congetion Rights (SIEPAC)
CRIE	Regional Regulatory Agency (SIEPAC)
CVT	Variable Transmission Charges (SIEPAC)
DAM	Day Ahead Market
EAPP	Eastern African Power Pool
EAC	East African Community
ECOWAS	Economic Community of Western African States
EECI	Energie Electrique de la Côte d'Ivoire
EGL	Energie des Grands Lacs
EIS	Energy Imbalance Service
EOR	Independent system and market operator (SIEPAC)
EPC	Electricity Power Council (in CIS)
ESAA	Energy Supply Association of Australia
FCM	Forward Capacity Market
FERC	Federal Energy Regulatory Commission (US)
FTR	Financial Transmission Rights
GMS	Greater Mekong Sub Region
ICC	Information and Coordination Center (in WAPP)
ICE	Intercontinental Exchange (US)
ICT	Independent Coordinator of Transmission (SPP)
IDC	Interchange Distribution Calculator
IGA	Inter–Governmental Agreement on Power Trade in the Greater Mekong Sub–Region
IPP	Independent Power Producers/Project
IPSCIS	Interconnected Power System of Commonwealth of Independent States
JOA	Joint Operation Agreement
LIP	Locational Imbalance Prices (in SPP)
LMP	Locational Marginal Price
LOLE	Loss of Load Expectation
LSE	Load Serving Entities
LTTR	Long Term Transmission Rights
MCE	Ministerial Council on Energy (Australia)
MER	Regional Electricity Market of SIEPAC
MISO	Mid-West Independent System Operator
MO	Market Operator
MOI	Memorandum Of interest

NBI	Nile Basin Initiative
NBPT	Nile Basin Power Trade
NE - ISO	New England Independent System Operator
NEM	National Electricity Market (Australia)
NEMMCO	National Electricity Market Management Company
NERC	National Electricity Reliability Council
NSI	Net Scheduled Interchange
OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal
PAC	Participant Advisory Committee (Australia)
PJM	Regional Market of Pennsylvania, New Jersey and Maryland
PMU	Project Management Unit
PPA	Power Purchase Agreement
PRSG	Planned Reserve Sharing Group (in MISO)
PTC	Power Technical Committee
PTCOM	Power Trade Council of Ministers
PTOA	Regional Power Trade Operating Agreement (in GMS)
PTS	Power Trade Secretariat
RPM	Reliability Pricing Model in PJM
RPTCC	Regional Power Trade Coordination Committee (in GMS)
RPTP	Regional Power Trade Project
RRO	Regional Reliability Organization
RSC	Regional State Committee (in SPP)
RTEPP	Regional Transmission Expansion Planning Process in PJM
RTN	Regional Transmission Network (in GMS)
RTO	Regional Transmission Organization (US)
RTR	Regional Transmission Grid (SIEPAC)
SADC	Southern African Development Community
SADCC	Southern African Development Co-ordination Conference
SAP	Subsidiary Action Program
SAPP	Southern African Power Pool
SCED	Security-Constrained Economic Dispatch
SCUC	Security-Constrained Unit Commitment
SERC	Southeastern Reliability Council (US)
SIEPAC	Central American Regional Electricity Market
SMD	Standard Market Design (NE-ISO)
SONABEL	Société Nationale Burkinabè d'Electricité
SPP	Southwest Power Pool
SRMC	Short Run Marginal Cost
STEM	Short Term Energy Market (in SAPP)
SVP	Shared Vision Program
TSO	Transmission System Operator
TUOS	Transmission Use of System
UES	Unified Energy System
UPS	Unified Power System (in CIS)
USSR	Union of Soviet Socialist Republics
VOLL	Value of Lost Load
VRA	Volta River Authority
WAPP	Western African Power Pool
WSPP	Western Systems Power Pool

Table 1: Acronyms

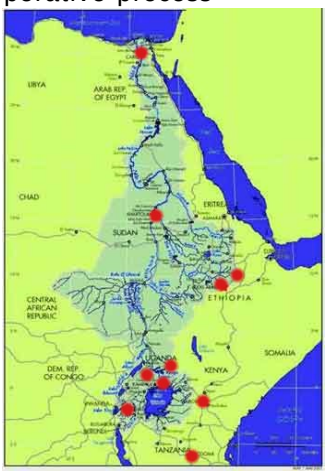
II FOREWORD

The purpose of this report, named "COMPREHENSIVE FINAL REPORT", is to present a comprehensive report on the power trade framework proposed for the Nile Basin countries which incorporates all discussions and comments made during the Final Workshop held in Entebbe – Uganda from 11th to 13th December 2007.

This report is Deliverable 15 and corresponds to part of Activity 13: "*Comprehensive Draft Report*" of the project's revised terms of reference agreed during the inception mission in Dar es Salaam.

III BACKGROUND AND CONTEXT OF THIS PROJECT

The Nile Basin Initiative (NBI): Formally launched in February 1999 by the Council of Ministers of Water Affairs of the Nile Basin States, the NBI provides a forum for the countries of the Nile to move forward, towards a cooperative process in order to achieve tangible benefits in the Basin and build a solid foundation of trust and confidence.



The NBI has two primary areas:

- Basin-wide projects - "Shared Vision Program" (SVP) to help create an enabling environment for action on the ground
- Sub-basin projects - "Subsidiary Action Program" (SAP) is aimed at the delivery of actual development projects involving two or more countries

The Regional Power Trade Project (RPTP) is one of the thematic projects to be implemented basin-wide, to help establish a foundation for trans-boundary regional cooperation and to create an enabling environment conducive for investment and action on the ground, within an agreed basin-wide framework.

The RPTP aims to establish the institutional means to coordinate the development of regional power markets (such as a Power Pool) among the Nile Basin countries, through the creation of a power trade framework which can contribute to achieve poverty reduction including expanding access to reliable and low-cost power supply, in an environmentally sustainable manner.

The broad benefits envisaged from the NBI are poverty alleviation through improved, sustainable management and development of the shared Nile waters, and enhanced regional stability through increased cooperation and integration among the Nile states.

Project activities are coordinated by the Project Management Unit (PMU) at the regional level and by the PTC members at the country level. Activities include the establishment and operation of a power trade framework, the conduct of a comprehensive basin-wide analysis of long-term power supply, demand and trade opportunities, the identification of potential development projects within the NBI's SAPs, the preparation of a public participation plan and stakeholder analysis, and the development of knowledge management tools. These activities are carried out

through studies, consultations, workshops, seminars and other modalities, for which the project may seek assistance from national and regional research and training institutions, NGOs, consultants and other public or private organizations from the Nile basin region.

The current project: "CONSULTANCY TO DEVELOP AN INSTITUTIONAL, REGULATORY AND COOPERATIVE FRAMEWORK MODEL FOR THE NILE BASIN POWER TRADE" falls within the RPTP framework. Key project objectives include:

1. Assisting the RPTP and the NBI Power Technical Committee (PTC) in reviewing institutional arrangements adopted by regional power trade organisations, and submitting discussion papers to the RPTP, comparing and contrasting the different arrangements.

2. Conducting an information gathering tour so as to collect basic information of the countries in the region which will permit developing in the future recommendations and perform an informed decision making process.

3. Proposing a model for developing Regional Power Trade at the Nile sub–basin and basin levels.

4. Drafting Memoranda and legal documents as required.

IV CONCEPTUAL APPROACH

1. NBI POWER TRADE GENERAL CONCEPT

The Nile Basin region is characterized by large disparity in terms of power sector structures and regulatory environments. The existence of vertically integrated state-owned companies and private sector participation restricted only to Independent Power Producers is, however, quite generalized. There is disparity in terms of policies and objectives for the power sector, in terms of financial and human resources, among the most significant issues characterizing the NBI Power Trade concept. [1]

Taking advantage of experiences used quite successfully in other regional initiatives[2], yet taking into account these circumstances described above, the proposed general approach for the NBI Power Trade is based on the following principles:

- The NBI Power Trade Model is based on the principle of minimizing mandatory obligations to countries and market participants (utilities and others), and creating the proper frameworks so as to let the economic interests of the parties to be the real drivers for the regional integration. Only win–win deals will promote the regional integration on a sustainable basis

- Regional regulation, perceived as the rules for cross border trading, should not interfere with national legal/regulatory frameworks. Any unavoidable interference should be extremely limited (so, the alternative of introducing deep reforms to national legal/regulatory frameworks or of moving towards uniform national legal/regulatory frameworks to base the regional trading system is rejected) [3]

- Cross border trading regulation will apply only to the interconnection points between countries. From those points towards the countries' interior, the only valid legal/regulatory framework will be the one ruling each country's power sector.

- The NBI Power Trade Regulation will only apply to transactions that require systematic treatment[4], due to the benefits that this approach brings to the member countries' common interests. However, for other activities whose benefits can only be measured in terms of the perception individual countries have of them, rules under which these activities will be implemented are left to the decision of the involved parties (a typical example is the investments of regional scope).

- The proposed model minimizes, at least during the initial stages, permanent structures and staff, as a way to improve its sustainability by reducing the financial burden. [5]

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[1] Annex 4 discusses the different barriers to power trade in the region and alternatives to solve them.

[2] As outlined in Annex 2.

[3] Annex 6 analyzes modifications that may be needed in the regulatory regimes to establish the regional power trade model proposed.

[4] "transactions that require systematic treatment" are those that occur regularly or frequently and need to be standardized; for example, the transaction in the day ahead market, the payment or transmission services, etc. It is used in opposition to those specific situations that occur from time-to-time and do not require standardization such as the negotiation of a joint project, or any other investment in the region.

[5] Annex 9 analyzes the resources needed to establish the power trade model proposed.

- The proposed model takes into account several other regional initiatives which in some way or another, have the "development of power trade" (or regional markets) among their objectives[6]. It also takes into account other experiences and programs within the NBI that can contribute in some way to the achievement of the objectives. The next figure presents the key actors in the region and within the NBI, which have either overlapping objectives with the NBI, or can contribute to power trade development. The model articulates all these regional institutions and programs so as to take advantage of existing experiences, capacities, etc. [7]

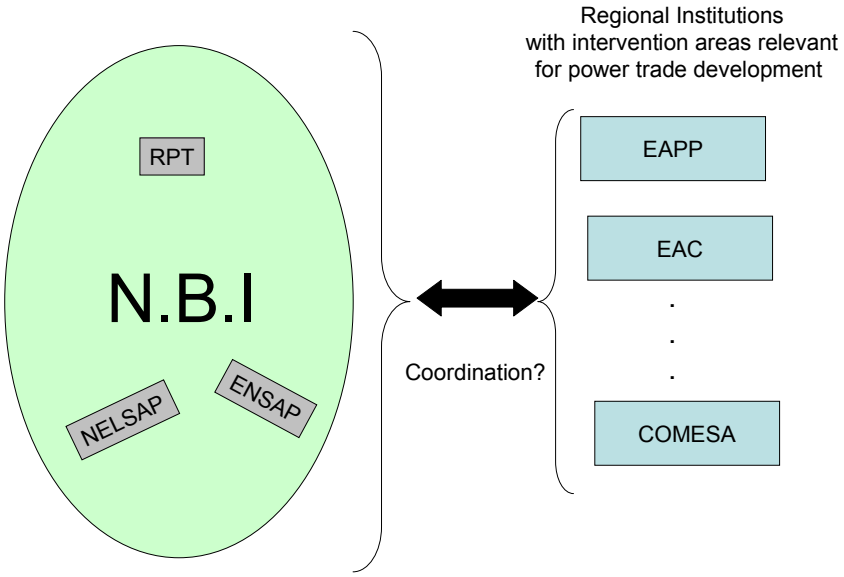

Figure 1: Regional Institutions and programs in NBI

2. NBI POWER TRADE PHASED DEVELOPMENT

There are several reasons for which a phased approach to regional power trade implementation is required. In the following sub-sections those stages that are more relevant for the case of the NBI Power Trade are analyzed. [8]

[6] Annex 2 analyzes several examples of regional power trade and Annex 5 analyzes a few of the most relevant examples in detail.

[7] Annex 3 analyzes several institutions in the region and their objectives.

[8] Annex 2 and 5 show international experiences that demonstrate that the approach in stages or phases is the most appropriate.

2.1. GENERAL CONSIDERATIONS

2.1.1. FRAMEWORK

International experience shows that the development of a regional power market requires establishing the initiative's foundation principles for implementation in an initial and general agreement among the participating parties. For the NBI Power Trade, this document is envisaged to be named the **NBI Power Trade Treaty**. [9]

Each member country willing to participate in the NBI Power Trade should accept that Treaty, which will be binding for the country.

Each country should also establish internally how this Treaty is binding for the agents acting in the national power sector and participating in the regional environment, in the event that there are multiple agents active in the national sector.

2.1.2. BASIN AND SUB-BASIN REGIONAL CHARACTERISTICS

Among the different member countries, there are historical and geographical reasons that demarcate natural sub-regions.

Although in the later stages of regional market development it will be necessary to have a unified system in all aspects, for initial and intermediate stages it is possible to have temporarily different institutional arrangements and trading rules for each sub-region, if that simplifies their implementation according to possible different expectations among sub-regions.

Mature initiatives taken and developed under the Shared Vision Program as well as its two sub-basin Subsidiary Action Plans, namely NELSAP and ENSAP, are particularly important as they have accumulated many achievements, experience and concrete proposals through their Power components, especially with regard to coordinated regional expansion planning.

However, it is important to remark that while some arrangements may be temporarily different, sub-regions should coordinate their activities through centralized coordination infrastructure. Aspects related to expansion planning coordination/exchange of information, technical standards harmonization, capacity building, and even the development and adjustment of trading rules, should always be coordinated, full in the region, even if some differences are conceivable for some aspects.

2.1.3. DIFFERENCES AMONG MEMBER COUNTRIES

The NBI countries are characterized by very different levels of economic, industrial and technological progress. Their power sector policies and objectives differ significantly between downstream and upstream countries. In order to propose an appropriate path to development of NBI Power Trade, differences that affect the development of cross border power trade were analyzed[10], and a number of recommendations were made on how to mitigate those impediments, especially during the initial stages.

However, the main principle in this regard and on which the transactions model is based, is that decisions made by the countries or market participants should focus more on economic interests than in centralized mandatory obligations.

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[9] Annex 11 proposes the draft contents of the "Treaty"

[10] Annex 10, Deliverable 4 discusses this issue.

Examples like SIEPAC show that integration is able to move forward only when all the participant countries feel that they are receiving benefits proportional to their committed investment or issuance of sovereign guarantees.[11]

The opposite example also applies. Similarly, the process may be blocked from moving forward, if one of the largest countries feels that due to its dominant position, it has to contribute proportionally more than the others (the case of Great Mekong Sub Region[12]).

2.1.4. INFRASTRUCTURE DEVELOPMENT

Infrastructure Development is one of the most critical aspects for regional integration and cross border trading. It is the vicious circle of "the lack of infrastructure prevents the cross border trading to develop, and the lack of cross border transactions prevents the creation of financial resources to further expand that trend". [13]

One of the most important drivers to improve the potential of developing infrastructure is multi-country coordination of system expansion planning processes, enabling them to systematically detect investment opportunities beneficial for the group.

The creation of proper channels, procedures and trust to make this possible requires effort and time, and in itself is also a process that over time will evolve according to the evolution of the countries' power sectors.

The achievements already obtained through several initiatives undertaken in the region, particularly ENSAP and NELSAP, are positive signs showing that this coordination is already established in the region and deserves to be promoted and supported as a reasonable way of covering these essential aspects of power regional integration.

Undoubtedly both the existence of a well developed system expansion coordination tool and a robust Power Trade Framework, will improve the chances of a sound regional power pool and speed up the pace of its establishment.

2.1.5. INSTITUTIONAL DEVELOPMENT

The multiple dimensions comprising regional integration require several functions to be implemented; functions that require institutions to be in charge of them.

While during the initial stages of regional integration those functions can mostly be implemented in a decentralized way with minimal coordination, during later stages of the NBI Power Trade increasing needs will arise regarding centralized institutional requirements.

The phased manner proposed for the implementation of the NBI Power Trade Model is such that institutions are established in a simplified way, mostly temporarily assigning those functions to existing bodies, and over time transferring those functions to the definitive regional institutions.

It is important that the phased approach also promotes a gradual and deepening cooperation among the different agencies acting in the region with some sort of functional overlapping.

Over time it will be necessary to have at least a regional regulatory body, able to develop and enforce regional rules and resolve disputes, and a regional operator able to coordinate the technical operation of the integrated system.

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[11] A full description of the SIEPAC experience is presented as part of Annex 5.

[12] The GMS experience is presented fully in Annex 5.

[13] The problem of lack of infrastructure is presented in Annex 4.

2.1.6. REGULATORY DEVELOPMENT

Regulatory development is perceived as the need for establishing regional rules of the game that create an environment in which transactions can be carried out in a systematized way. These rules may also contemplate sub-regional variations, which over time will also need to be harmonized once sub-regions converge to unified trading platforms.

2.2. STAGE I: INITIAL STAGE, PREPARATORY STAGE

Stage I starts from the present situation, and will last until its targets and institutional development have been achieved.

2.2.1. TARGETS

1. Signature of the NBI Power Trade Treaty by all member countries. The Treaty will set out the principles based on which the NBI Power Trade will be implemented, how decisions will be made, and include the roadmap the parties will be subject to. [14]

2. Fluid information exchange among all member countries about their domestic system expansion plans and development procedures aimed at coordinating actions between countries (interested in doing so). [15]

3. Technical standards unification, aimed at having standards consistent with system interconnection requirements.

4. Regional Data Base development, based on the data gathering started in this consultancy and the updating procedures to be implemented in the near future. This data base is important for creating the basis for cooperation in terms of expansion planning and operation strategies and other policies that could be jointly implemented.

5. As a consequence of the information exchange among the countries and the creation of the Regional Data Base, the countries will prepare reports with a critical analysis of their own regulatory framework and the impediments those frameworks would impose to the development of next stages of the NBI Power Trade [16]

6. As part of the NBI Power Trade Treaty, the countries will prepare their positions with regard to identifying enforcement mechanisms required to carry out regional trade and dispute resolution mechanisms, for cases of dispute between member countries related to regional power trade (particularly in the long term)

2.2.2. INSTITUTIONAL DEVELOPMENT

Activities required to be deployed during Stage I will require minimal institutional development. These requirements will be for centralized coordination and decentralized execution of the activities foreseen for this stage.

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[14] Draft contents of the Treaty are presented in Annex 11.

[15] Templates and procedures for data gathering are proposed in Annex 8.

[16] Reporting procedure is proposed in Annex 8.

At the centralized level, it is proposed to create a so called **Steering Committee** and a **NBI Power Trade Secretariat**. This Secretariat will work in coordinating a number of **Working Groups**.

The Working Groups are ad-hoc bodies composed of representatives from the member countries, whose functions will be to act as a liaison between activities agreed to be developed at regional level and the specialist each country will internally assign for that purpose.

The countries will sign a protocol (according to the procedures contained in the Treaty) establishing their commitments with regard to those Working Groups and the way the information will be exchanged through the Secretariat.

a) Steering Committee

The Steering Committee is a high level body that oversees the activities of the Secretariat, and is composed of representatives of the countries such as Permanent Secretaries or the equivalent.

The Steering Committee supervises the Secretariat activities, serves as channel of communication with the Power Trade Council of Ministers (highest and political level organization within the power trade framework) and prepares the decisions of the PTCOM.

The Steering Committee is not a permanent body, they meet periodically for decision making and reviewing the Secretariat's activities.

b) NBI Power Trade Secretariat

The NBI Power Trade Secretariat (PTS) will have the following main functions:

1. Promote and achieve the signature of the Treaty by the countries. This promotion should be done in a coordinated way through the NBI – TAC and NBI – COM, and/or other instances specially created for this purpose (with participation of government departments directly involved in power development).

2. Prepare the agenda / work plan for each of the Working Groups. During the time the NBI Power Trade is not active, those agendas / work plans will be adopted by the PTC.

3. Coordinate the execution of the approved work plans with the members of the Working Groups. This coordination will be made through the Working Groups' liaison representatives.

4. Submit results and proposals to the Steering Committee for approval, which will eventually take them to the PTCOM. Until the NBI Power Trade is established, results will be submitted to the PTC.

The NBI Power Trade Secretariat is an institution that may disappear once the definitive regional institutions are in place, they have taken over their functions (Stage III), regional trade is mature and the different actors are confident in these institutions. The key role of the Secretariat, especially during Stage I, is to prepare several aspects of the power regional integration and their implementation.

Therefore, one of the options to implement the Secretariat during this Stage is to allocate these functions as part of the structure in place in the NBI, the PMU.

Another option for early centralized coordination is to request either one of the member countries or even some other regional institution having the necessary resources to coordinate specific tasks or working groups, taking advantage of the synergies and the cooperative common work registered today.

Finally, if those options are not feasible, that coordination could be implemented as a stand alone operation.

As part of the current consultancy, an estimation of the required resources to manage this Secretariat's functions has been conducted. It is foreseen that some reinforcements will be required in terms of labour force, communications and logistics. [17]

c) Working Groups

The Working Groups are decentralized groups of experts, in each of the functional areas needed for RPT development, belonging to the NBI Power Trade member countries. The group's members will work in their own bases in their home countries according to a work plan established for each one

Each country will nominate local experts for the group, and a Liaison Person (with a deputy) in charge of dealing with the coordinator in the Secretariat.

Local experts are not expected to work neither full time on these assignments or in exclusivity. Each country is free to organize the work internally according to the most convenient way, mainly to optimize different use of resources, either domestic or regional.

The Liaison will report on one side to the Coordinator in the Secretariat, and on the other side to the PTC representative (Ministry representative) in his/her country.

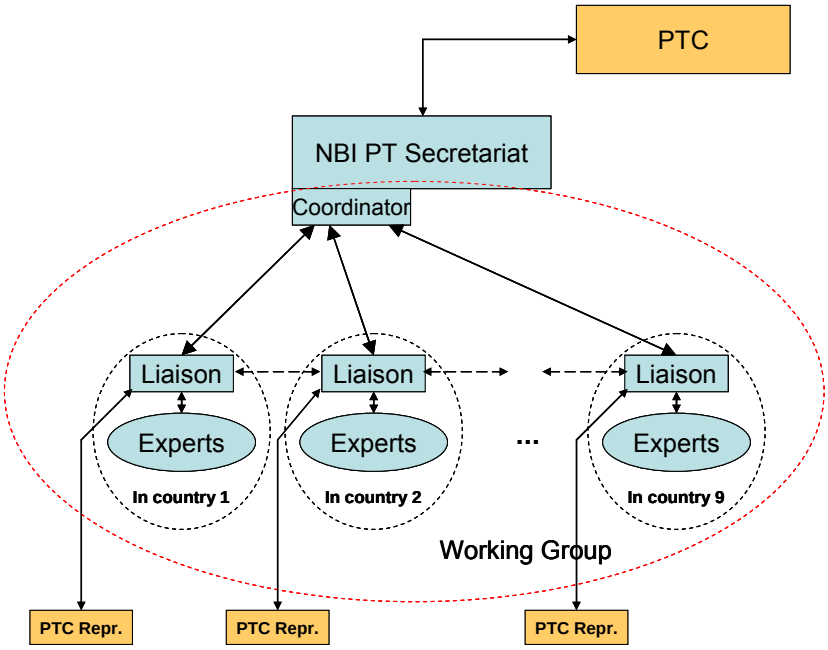

Figure 2: Organization of Working Groups

d) Working Groups for Stage I

In principle the initial Working Groups and their corresponding objectives for Stage I should be:

[17] Resource requirements to establish the power trade framework are estimated and detailed in Annex 9.

- ***Cross-Border Trading Rules Working Group***

  This Working Group will be in charge of adjusting the initial set of Cross-Border Trading Rules in the coordination of the Secretariat. The Secretariat will submit the Rules for official PTCOM approval and convert them into enforceable rules for all member countries signatories of the NBI Power Trade Treaty.

- ***System Expansion Planning Working Group***

  This Working Group will be in charge of ensuring that the domestic system expansion plans are shared at regional and sub–regional levels. The group will work in systematizing that exchange.

  It will also work to standardize system expansion planning procedures, data bases, computational tools, etc., to be proposed to the member countries. The goal is to build uniform approaches in system planning that will facilitate future integration in these matters.

- ***Operational Procedure and System Technical Standards Working Group***

  This Working Group will be in charge of proposing the required technical standards harmonization so as to make the parallel operation of neighbouring power systems viable.

  It will also be in charge of developing technical procedures to be employed in cross-border operation, including operational planning, online operation and post operation matters.

- ***Capacity Building National Coordination Working Group***

  This Working Group will be in charge of proposing and harmonizing capacity building programs, aimed at increasing the professional skills of individuals participating in the national power sectors.

- ***Regional Data Base Working Group***

  This Working Group will be in charge of collecting the information in each member country, according to the procedures established by the Secretariat, and use specific forms for that purpose (produced by this consultancy). The Secretariat will be in charge of updating the Regional Data Base and publishing it in the NBI Power Trade Web Site.

- ***Other Working Groups***

  For PTCOM approval, the Secretariat will be able to propose the creation of other working groups.

Terms of Reference for each one of the four proposed Working Groups are included in Appendix II. Deliverable 11 (Annex 9) establishes resources needed in the form of human resources, information system support and tools, for setting up and maintaining the Nile Basin Power Trade regimes in the initial stages, including specific training and development programs for staff in the power sector of participating member countries.

e) Funding Mechanisms

It is proposed that the labour costs of national experts and liaison persons in each country be borne by those experts' country of origin. Other costs, like logistics, software, technical assistance, meetings, travel, etc., will need to have specific financial support. These costs are estimated for the different Stages of the NBI Power Trade implementation as part of Deliverable 11 (Annex 9).

2.2.3. SUB-REGIONS

During this stage, all Working Groups should be able to work under the same region-wide work plans, and it is not considered necessary to work with different agendas in sub-regions.

The formation of sub-regional Cross-Border Trading areas will not necessarily follow the existing NELSAP and ENSAP country boundaries, they should be pragmatically determined by how the power networks are interconnected (though in many aspects those interconnection expansions will be determined as a consequence of the decisions made within those Strategic Actions Plans).

2.2.4. TRADING ARRANGEMENTS

During this Stage and until Stage II starts, existing cross-border transactions will continue as they are. No systematic treatment will be given to cross-border transactions.

However, PPAs and cross-border power sale agreements signed during this stage shall be cognizant of the impending regional power markets.

2.3. STAGE II: BILATERAL CROSS-BORDER TRADING

Stage II is proposed to be ready for implementation when member countries have already signed the NBI Power Trade Treaty. It may start even partially with those countries that have already signed the agreement, even if others remain pending.

The main features proposed for this stage are:

- Transactions are bilateral between contiguous countries. During this stage transactions between not contiguous countries using the transmission system of third parties are not expected.

- The participants in the transactions are countries, not individual agents in each country, and the system operators (or equivalents) are the acting party in each country for the transaction.

  The following figure schematically presents the features of trading in this stage.

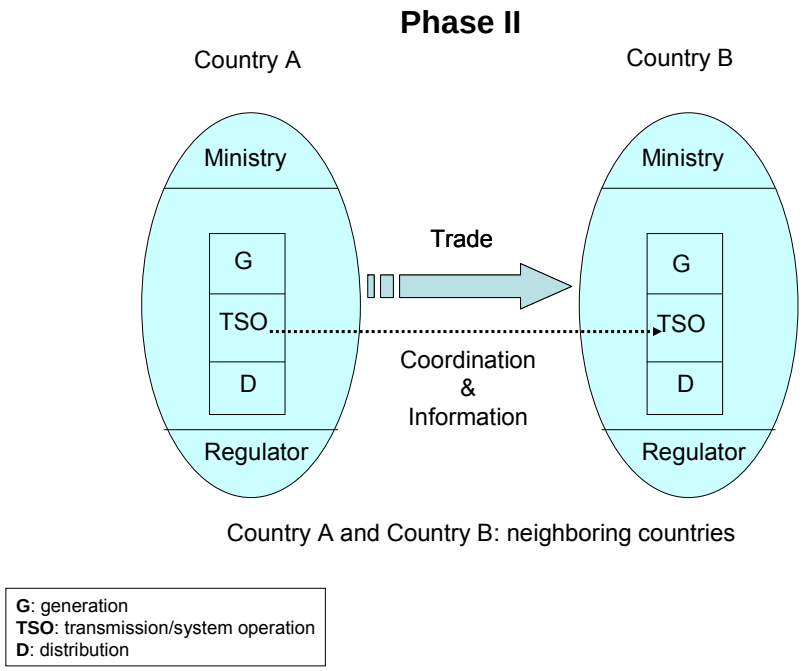

Figure 3: Trading scheme in Stage II

- With regard to the regional system expansion planning, the region, at sub-basin level, prepares coordinated expansion plans, further identifying projects of regional interest, at basin or sub-basin levels. The identified projects are presented to the member countries.

2.3.1. TARGETS

The main targets for this stage are the following:

- NBI Power Trade Regulation prepared and approved by all the signatory countries of the NBI Power Trade Treaty. This regulation is the set of rules that will define the trading system for member countries.

  This regulation will deal with the following main topics:

  1. standard types of transactions
     a. bilateral transactions between countries
     b. short term transactions
     c. support in emergencies
  2. day-ahead market based on daily bids (pairs of quantities and prices)
  3. deviation settlements/compensations
  4. allocation of the available transmission capacity
  5. system operator coordination mechanisms
  6. dispute resolution mechanisms

Guidelines for those main topics of the regulation are included in the section "Trading Arrangements Guidelines".

- Availability of adequate procedures, data bases, computational tools and professional capacity for the development of regional system expansion plans and identification of investment projects of regional interest (basin or sub-basin level).

2.3.2. INSTITUTIONAL DEVELOPMENT

The NBI Power Trade Treaty will have to define, among other issues, what institution will be its depositary: the institution that will act as the one empowered to interpret the Treaty throughout its implementation.

The NBI Power Trade Treaty will also have to define the institution in charge of developing, amending and approving the NBI Power Trade Regulation.

Finally, the NBI Power Trade Treaty will have to define the mechanisms to be employed for dispute resolution between countries, or between countries and the Treaty depositary or the institution in charge of regulation. One effective practice in developing economies is the use of arbitration with recognized international reputation

It is envisaged that it will be necessary to keep the Working Groups established during Stage I working with the same responsibilities, and similarly the Secretariat should continue coordinating that work.

The System Expansion Planning Working Group's scope of work will be expanded to include the objectives of this stage: coordinated regional system expansion planning and regional investment project identification.

With regard to institutional needs for the technical and commercial operation of cross border trading, during this stage no special requirements are considered necessary, provided that those transactions will be bilateral and the coordination will be directly through the incumbent system operators.

2.3.3. SUB-REGIONS

During this stage, regulation could have some special features reflecting the sub-region's specific needs. It is however recommended to keep those differences restricted as much as possible to the most critical issues, (mainly due to adequate existing practices, such as reporting mechanisms, timing for closing bidding processes, etc.) and maintain uniformity for the whole region in those core aspects of the NBI Power Trade model.

2.3.4. TRADING ARRANGEMENTS

Main features of the NBI Power Trade Regulation are described in the TRADING RULES section.

2.3.5. CONSIDERATIONS ABOUT REGIONAL EXPANSION

As discussed in the introductory sections, regional expansion can be coordinated in the ENSAP and NELSAP environments. From the NBI Power Trade perspective, it is assumed that during Stage II, everything related to this aspect of regional electricity integration will continue being coordinated from those Action Programs, or similar ones to be created. It is

also envisaged that coordination among different incumbent agencies acting in the regions with similar purposes, will result in common decisions that foster optimized investment plans.

2.4. STAGE III: MULTI - PARTY TRANSACTIONS. TRANSITS

Stage III differs from the previous one in the following aspects:

- The Regional Regulation is prepared to handle transactions between national power sector agents, with transactions no longer restricted only to those between countries.
- There is potential for multilateral transactions, involving more than contiguous countries.
- There is potential for countries to provide transmission services (through national networks) to third countries electricity trading.
- There are more efforts made towards promoting regional investments.

The following figure schematically presents the features of trading in Stage III.

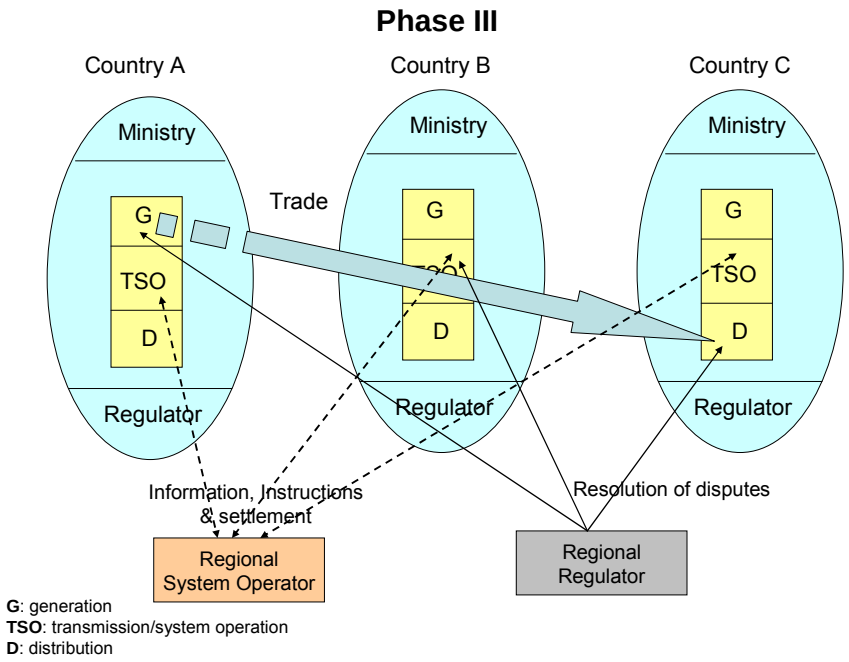

Figure 4: Trading scheme in Stage III

2.4.1. TARGETS

The new targets for Stage III are:

1. expand the NBI Power Trade Regulation to allow the participation of national power sector agents as well as countries.

2. expand the regulation to include provisions needed for power transits through third countries.

3. with regard to regional system expansion, which during Stages I and II was proposed to be developed within the framework of the System Expansion Planning Working Group, it is foreseen that, once Stage III starts, market development will be mature enough to converge to a centralized coordination among countries, through the introduction of a new regulation related to centralized regional investment opportunities identification and decision making process,.

2.4.2. INSTITUTIONAL DEVELOPMENT

NBI Power Trade Regulatory Body (Regional Regulator). The regional regulator is introduced in Stage II to address the need for the development, adjustment and application of regional regulation. This regulatory body will also be incumbent in dispute resolution between participants to the regional power trade. Such roles at this stage require the presence of a full time regulatory body to manage all those tasks.

Regional System Operator. The complexity of technical and commercial transactions involving several parties in Stage III will require the presence of some operational coordination capacity. This capacity should be provided in the future by a Regional System Operator, which will coordinate the regional technical and commercial regional operation with the national System Operators. Temporarily, and until the volume of multilateral transactions is reasonable, these functions could be carried out by one of the National System Operators, selected for this purpose. Any extra costs due to this regional activities, as well as eventual needs of physical capacity (computers, SCADA, communications, metering, etc.) should be borne by the NBI Power Trade member countries.

Both, the NBI Power Trade Regulatory Body and the Regional System Operator, are the definitive institutions that will finally take over the administration of the NBI Power Trade, in its regulatory and operational aspects.

With this institutional scheme, it is considered that the functions assigned originally to the Secretariat during Stage I and II, may no longer be necessary, and therefore the Secretariat could be dissolved; unless functions other than those related to the NBI Power Trade are still been carried out by it. Once power trade is established and actors are confident in the institutions (Regional Regulator, Regional System Market Operator) the need to maintain the Power Trade Secretariat or reformulate it should be re-evaluated.

2.4.3. SUB-REGIONS

The increasing potential for multilateral cross border electricity trading will likely encourage the unification of sub-regional markets. Though these unifications are not required in this stage, the expansion of the markets will likely illustrate the benefit of sub-regional market convergence. If this is the case, there will be some need for harmonization of particularities that may have been introduced in sub-regional regulations.

V INSTITUTIONAL FRAMEWORK

The institutional framework for power trade in the NBI is formed by: the institutions involved in one way or another in power trade, the relationship among these institutions and the rules, regulations and agreements that are needed to establish and manage power trade in the region. Among all these rules, regulations and agreements, the most important is the "Treaty" which represents the initiative's "kick off", provides legitimacy to all further developments required, and confers the ability to enforce decisions. The guidelines for power trading rules have been developed in previous sections of this report. This section will deal with the institutional aspects: identifying actors, institutions, relationships, etc.

1. THE TREATY

The Treaty is a document that sets out the nature of the Power Trade in the NB region, giving it the proper political and institutional status, specifically establishes the principles for power trade in the region, creates the key institutions, establishes their roles and relationship with other institutions (including those regional institutions, domestic institutions and already existing institutions or programs within the NBI) [18].

Regional NBI Power Trade is considered as an initiative of NBI therefore, the Treaty is a document that needs the approval of the highest authority of the NBI, The Council of Ministers (CoM). The Council Of Ministers should give clearance to this initiative, so that Ministers in charge of electricity issues in the member countries may sign the Treaty. This way, the procedure complies with the formal requirements in place of the NBI. The highest authority in power trade matters will be the Council of Ministers in charge of electricity (Power Trade Council of Ministers), which will coordinate with the COM when needed (in all matters that involve water issues).

The key definitions of the Treaty are:

1. The Nile COM approves the initiative and gives clearance to proceed with the signature of the Treaty (by the Ministers in charge of electricity issues) according to the NBI procedures.
2. The Treaty is a document signed by the Council of Ministers dealing with electricity issues of each of the countries. They will be the highest regional authority in charge of developing power trade in the region. This is done independently of the general structure of the NBI. This body is the NBI Power Trade Council of Ministers (PTCOM).
3. The previous point implies that once the Treaty is signed, all decisions regarding regional power trade will be responsibility of the NBI Power Trade Council of Ministers (PTCOM) created by the Treaty. This PTCOM is comprised of the Ministers in charge of Electricity of each of the member countries. This body will be the decision making organisation regarding regional power trade. It will have autonomy from other structures of the NBI always when the origin of the power does not involve use of water resources in the region (i.e. hydro generation). Whenever there are water resources involved, its decisions will be subject to coordination and approval of the incumbent NBI structures (i.e. NBI Council of Ministers).
4. A NBI Power Trade Secretariat is created to carry out all the day-to-day activities required, coordinate actions between the different institutions and working groups, steer the general process and implement the Ministers' decisions. This is a permanent (though small) body since a "reference point" is needed to achieve power trade development in the region. This body may disappear in the long term once power trade is firmly established in the region with strong regional institutions that can carry out their tasks without other support and coordination, such as the Regional Regulator and the Regional System Operator.

[18] Annex 11 presents the draft contents proposed for the Treaty.

5. The NBI Power Trade Secretariat will have as responsibilities (among others) to coordinate and foster power trade in the region, create the needed working groups, coordinate the required studies, and coordinate with other regional institutions. At the same time, the NBI Power Trade Secretariat will have to assume functions that working groups or organisations may otherwise undertake, until they are created and operational.
6. A Steering Committee is created and composed of high level officials of each country (i.e. Permanent Secretaries or equivalent). The main objective of this body is to facilitate communication with the Ministers of the PTCOM and provide a high level advisory on those issues that require a decision before they reach the highest level (Power Trade Council of Ministers).
7. Within the power trade general framework it is proposed that many of the activities and roles that are needed be shared with other existing institutions and/or programs. There are already institutions in the region with interests similar to those of this initiative and there is valuable experience in some fields that does not need to be repeated nor should be forgotten. The Treaty will "recommend" this coordination among regional institutions or the division of roles and responsibilities.
8. If the proposal for "sharing activities" with other programs of NBI such as NELSAP or ENSAP is accepted, then this division of activities could be integrated directly in the Treaty. This may be possible since NELSAP, as a part of NBI, falls under the authority of the Council of Ministers.
9. Definition of the actors participating in power trade in each stage; this point will be described further in this section.
10. Definition of institutions with roles and responsibilities in each stage; this point will be described further in this section.
11. Other legal standard aspects such as incumbent authority, depositary of the Treaty, interpretation, etc., are part of the Treaty.

2. IDENTIFICATION OF ACTORS IN THE REGIONAL POWER TRADE

Power trade actors are all institutions, companies, organisations that have a role in power trade by participating in a commercial transaction, or as being part of the governing institutions. These actors can be distinguished by their domestic and regional scope of activity. Who these actors are in each phase of power trade is discussed below.

2.1. STAGE I

Stage I is a preparatory stage where trading continues "as is" and the initial studies and agreements are reached so that the NBI Power Trade regime in the region can begin.

2.1.1. DOMESTIC ACTORS

Key domestic actors are:

- **Ministers in charge of electricity**: they will have to agree on the terms of the Treaty and later, once the Treaty is approved, they will be responsible for high level political decision to foster power trade in the region as members of the PTCOM. As Ministers in their countries they will be the "Liaison" or communication channel of the NBI Power Trade with the country.

- **TSOs**: will participate in working groups defining and negotiating regional standards and transition to achieve them.

- **Regulatory authority**: will participate in defining and negotiating regional standards, will improve Import / export licenses and will participate in regional market rules working group.

2.1.2. REGIONAL ACTORS

Key regional actors are:

- **NBI Council of Ministers**: Will provide clearance for this initiative so the Treaty can be signed by the Ministers in charge of electricity affairs.
- **NILESEC**: following the procedures of NBI, the NILESEC will present the initiative to the NILECOM. Once NILECOM gives clearance, NILESEC will proceed to communicate with the Ministers in charge of electricity affairs of each country to implement the initial steps that will lead to establish the NBI Power Trade framework.
- **NBI Power Trade Council of Ministers**: will formally initiate the NBI Power Trade by establishing the NBI Power Trade Secretariat and providing high level guidelines.
- **NBI Power Trade Secretariat**: is created by the Treaty and initiates tasks of coordination, establishing working groups, establishing relations with other regional institutions, etc.
- **NELSAP**: participates in regional planning activities.
- **ENSAP**: participates in regional planning activities.
- **EAPP**: it is integrated in specific tasks coordinating with NBI Power Trade.
- **Working Groups**: perform activities coordinated by the NBI Power Trade Secretariat.

2.2. STAGE II

Stage II consists basically of bilateral trading between contiguous countries.

2.2.1. DOMESTIC ACTORS

Key domestic actors are:

- **Ministries of Energy**: will authorise cross border trading and will be the “Liason” or communication channel of the NBI Power Trade with the country.
- **TSOs**: will be the agents that trade representing their countries.
- **Domestic agents**: utilities, generators, large consumers (depending on the country’s power sector organisation) will take or provide the quantities of energy imported or exported by the TSO (according to the national regulations).
- **Regulatory authority**: will provide import / export licenses.

2.2.2. REGIONAL ACTORS

Key regional actors are:

- **NBI Power Trade Council of Ministers**: will oversee the development of the process and provide high level guidelines.

- **Steering Committee**: will be the intermediate body between the PTS and the PTCOM over viewing the process preparing decisions to be made by the PTCOM.
- **NBI Power Trade Secretariat**: continues with tasks of coordination, establishing working groups, establishing relations with other regional institutions, etc.
- **NELSAP**: continues with regional planning activities as defined in Stage I.
- **ENSAP**: continues with regional planning activities as defined in Stage I.
- **EAPP**: it is integrated in specific tasks coordinating with the NBI Power Trade Secretariat.

2.3. STAGE III

Stage III consists of trading between countries not necessarily contiguous and authorised agents in national systems are also allowed to participate in regional trading.

2.3.1. DOMESTIC ACTORS

Key domestic actors are:

- **Ministries of Energy**: will authorise cross border trading and will be the "Liason" or communication channel of the NBI Power Trade with the country.
- **TSOs**: will be the agents that coordinate in their countries and communicate to Regional System Operator.
- **Domestic agents**: utilities, generators and large consumers will participate in regional trading (if authorised agents in their countries) through the national TSO coordinated by the Regional System Operator and according to domestic rules and regulations.
- **Regulatory authority**: will provide import / export licenses.

2.3.2. REGIONAL ACTORS

Key regional actors are:

- **NBI Power Trade Council of Ministers**: will survey the development of the process and provide high level guidelines.
- **Steering Committee**: continues with its role the same as in Stage II.
- **NBI Power Trade Secretariat**: continues with tasks of coordination, establishing working groups, establishing relations with other regional institutions, etc.
- **NELSAP**: continues with regional planning activities as defined in Stage I.
- **ENSAP**: continues with regional planning activities as defined in Stage I.
- **EAPP**: continues with its activities as defined in Stage I and II.
- **Regional Regulator**: enforces regional trading rules and participates in dispute resolution.

- **Regional System / Market Operator**: begins developing services of system and market operation. Centralises the responsibility of developing and coordinating regional system expansion planning.

- **Regional Courts of Justice**: provide a forum for dispute resolution.

- **International Courts**: provide a forum for dispute resolution.

3. INSTITUTIONS AND ROLES

The introduction of the NBI Power Trade requires the establishment of certain institutions which are defined in the Treaty. Deliverable 3 [19] shows that there are several institutions in the region with overlapping fields of action, and that some of them are working to achieve similar objectives (or at least in part) as the NBI power trade initiative. The following table shows the geographical area of coverage of selected regional institutions or programs.

	EAPP(*)	EGL	EAC	COMESA	SAPP	CAPP	NBI	NELSAP	ENSAP
Burundi	●	●	●	●			●	●	
Congo DRC	●	●		●	●	●	●	●	
Egypt	●			●			●	●	●
Ethiopia	●			●			●		●
Kenya	●		●	●			●	●	
Rwanda	●	●	●	●			●	●	
Sudan	●			●			●	●	●
Tanzania	●		●		●		●	●	
Uganda	●		●	●			●	●	
Others	●			●	●	●			

(*) Tanzania and Uganda have not signed the MOU yet.

Table 2: Coverage area of Regional Institutions

Table 2 shows that, the member countries of the NBI, with very few exceptions, are also members of EAPP, COMESA and the program NELSAP.

Since financial resources and human resources are scarce, it is recommended to use all existing resources and capacities in the region, before procuring additional resources. Not doing so would be a misuse of resources.

Therefore, the prevailing policy should maximise the use of existing resources and "sharing of roles and responsibilities" with other regional institutions.

The following figure schematically represents the proposal of role and responsibility sharing among the institutions involved in the NBI Power Trade. Below the figure the relationships are detailed. In Section IX, Appendix I of this report another organisational alternative is presented.

[19] See Annex 3.

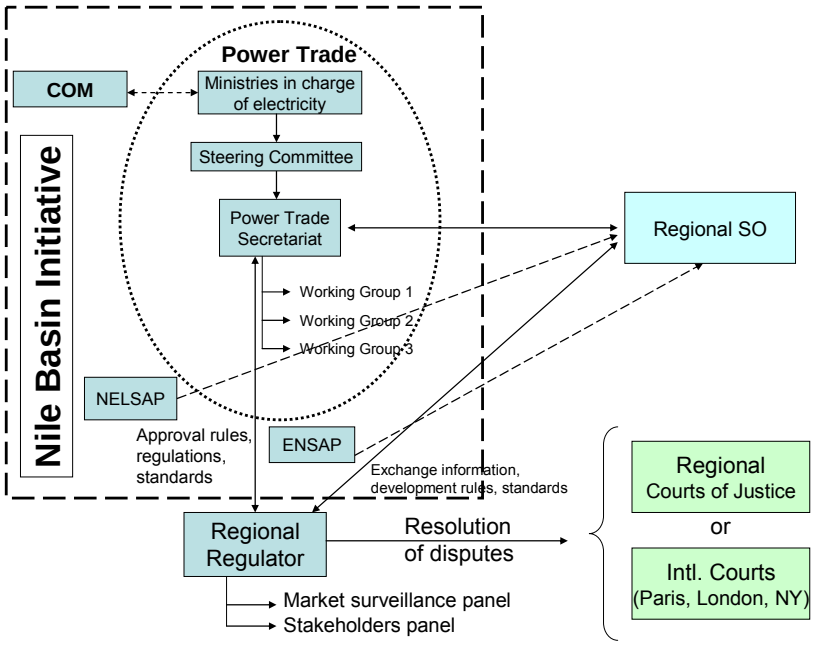

Figure 5: Articulation of Institutions in the NBI Power Trade

The articulation of the different institutions foreseen is as follows:

1. The NBI Council of Ministers, as the highest authority of the NBI, provides clearance to the initiative so Ministers dealing with electricity issues can sign the "Treaty" according to the procedures of the NBI.
2. The Treaty allocates the responsibility on issues dealing with power trade and development of regional power trade (market) to a body composed by Ministers in charge of electricity (NBI Power Trade Council of Ministers - PTCOM). The PTCOM is autonomous from the rest of the NBI structure in its decision making capacities.
3. It is the PTCOM that will be the authority to give the final approval to agreements, rules, regulations, etc regarding power trade.
4. A Steering Committee (SC) is created as a body under the PTCOM. This SC will be in charge of a general overview of the process; approving and supervising activities of the PTS and will channel of communication of the NBI Power Trade Secretariat to the PTCOM.
5. The NBI Power Trade Secretariat will be created by the Treaty. It is a permanent organization in charge of day-to-day activities regarding power trade, coordination, administration, implementation, etc. It reports to the SC and is responsible for implementing the decisions made by the Ministers. In the future, once power trade is developed in the region the Secretariat can be dissolved.
6. The activity of planning and master plan development is allocated to the corresponding working groups during Stages I and II. For Stage III, the working groups can be dissolved and this function be assigned to the regional system / market operator. It is recommended that this activity is carried out with the participation of other regional institutions or programs such as NELSAP and / or ENSAP given their experience on these issues and the more general framework that they can provide. This activity can be even outsourced to external consultancies or to existing regional institutions / programs.
7. For the initiation of Stage III a Regional .System / Market Operator is created to coordinate power trade according to the proposed guidelines.

8. A Regional Regulator will be created for the beginning of Stage III. Key functions of this organism will be to develop regional rules and regulations, enforce the approved regional rules and regulations, and participate in the resolution of disputes.
9. Options for dispute resolution (arbitration), may be a regional Court of Justice or international courts such as Paris, London, NY (private investors may prefer the latter over African courts).

4. THE INSTITUTIONS IN THE DIFFERENT STAGES

The different institutions foreseen as participating in the NBI Power Trade do not yet all exist; some need to be created, others will play a role from some stage onward. It is important to have the institutions needed in each stage in place, but it is also important not to create them before they are needed because it represents a cost that someone will have to bear.

The next table shows how the different institutions are integrated over stages foreseen for the NBI Power Trade.

	Institutions and their Functions per Stage		
	Stage I	**Stage II**	**Stage III**
NBI Council of Ministers	Already exists as the highest level authority in the NBI. Gives clearance to the initiative so Ministers of electricity can sign Treaty according to NBI procedures.	Coordinate with PTCOM only in those issues where "water" intervenes.	
NBI Power Trade Council of Ministers	Created through Treaty in Stage I	Performs activities established in the Treaty	
Steering Committee	Created through Treaty in Stage I	Performs activities established in the Treaty	
NBI Power Trade Secretariat	Created through Treaty in Stage I	Performs activities established in the Treaty	
NELSAP	Participates in regional planning activities		
ENSAP	Participates in regional planning activities		
Regional System / Market Operator		Created at the end of Stage II as requirement to begin Stage III	Leads and coordinates regional planning. Performs the function of Regional System / Market Operator

Regional Regulator		Created at the end of Stage II as requirement to begin Stage III	Performs the function of Regional Regulator as established in the Treaty.
Regional Court of Justice	Already existing in international regional institutions		Provides its Court of Justice as forum for dispute resolution.

Table 3: Institutions and their functions per stage

5. INSTITUTIONS & ACTIVITIES PER STAGE

5.1. ALLOCATION OF ACTIVITIES IN THE INSTITUTIONS FOR EACH STAGE

A final element for completing the NBI Power Trade is the allocation of specific activities (responsibilities) to each institution (or program) in the proposed stages.

The following table presents the key functions that each institution should perform in each of the stages of Power Trade in the Nile Basin.

	STAGE I	STAGE II	STAGE III
NBI Council of Ministers	Gives clearance to the initiative.	Coordinate with PTCOM in matters where water intervenes.	
PTC/PMU ([20])	▪ Negotiate text and get approval of Treaty. ▪ Develop working groups terms of reference ▪ Create working groups ▪ Coordinate and supervise working groups activities ▪ Cross border trading rules development and approval ▪ Coordinates initiation and negotiation of regional standards. ▪ Establishment of NBI Power Trade Secretariat		
Ministers dealing with electricity issues	Sign the Treaty which initiates the process after NILECOM gives clearance to the initiative.		

[20] Until the Treaty is signed and the Power Trade Secretariat can be created, the current PTC/PMU will have to play the role of this entity (during Stage I – the preparatory phase).

	STAGE I	STAGE II	STAGE III
NBI Power Trade Council of Ministers		▪ Provides high level guidelines for power trade development ▪ Approves strategic and action plan. ▪ Approves rules, regulations and agreements submitted by the NBI Power Trade Secretariat.	▪ Provides high level guidelines for power trade development ▪ Approves strategic and action plan. ▪ Approves rules, regulations and agreements submitted by the NBI Power Trade Secretariat.
Steering Committee		▪ Overviews the process of development of power trade at high level. ▪ Overviews activities of NBI Power Trade Secretariat. ▪ Reviews products issued by the NBI Power Trade Secretariat that need to be presented to the PTCOM for the final approval. ▪ Serve as channel of communication between PTS and PTCOM.	▪ Overviews the process of development of power trade at high level. ▪ Overviews activities of NBI Power Trade Secretariat. ▪ Reviews products issued by the Power Trade Secretariat that need to be presented to the PTCOM for the final approval. ▪ Serve as channel of communication between PTS and PTCOM.
Power Trade Secretariat		▪ Implements the policies defined by the PTCOM. ▪ Creates or eliminates working groups. ▪ Defines terms of reference of working groups.	▪ Implements the policies defined by the Ministers of Energy Body. ▪ Creates or eliminates working groups. ▪ Defines terms of reference of working groups.

	STAGE I	STAGE II	STAGE III
		▪ Supervises and coordinates activities of working groups ▪ Extracts conclusions from the different studies and submits recommendations to the Steering Committee. ▪ Prepares implementation of Regional Regulator and Regional System Operator. ▪ Establishes the required relationships and coordination with other regional institutions. ▪ Submits to the Steering Committee, to be presented to the PTCOM for final approval, rules, regulations, agreements, etc. ▪ Prepares action plan for next 3 years and submits to Steering Committee for revision and presentation to the PTCOM	▪ Supervises and coordinates activities of working groups ▪ Extracts conclusions from the different studies and submits recommendations to the PTCOM through the Steering Committee. ▪ Establishes the required coordination with other regional institutions. ▪ Submits to the Steering Committee, to be presented to the PTCOM for final approval, rules, regulations, agreements, etc. ▪ Prepares action plan for next 3 years and submits to Steering Committee for revision and presentation to the PTCOM.
NELSAP	▪ Participates in activities of regional planning and development of regional master plan as coordinated by PTS with corresponding working group.	▪ Participates in activities of regional planning and development of regional master plan as coordinated by PTS with corresponding working group.	▪ Participates in activities of regional planning and development of regional master plan in coordination with Regional System Market Operator.

	STAGE I	STAGE II	STAGE III
ENSAP	▪ Participates in activities of regional planning and development of regional master plan as coordinated by PTS with corresponding working group.	▪ Participates in activities of regional planning and development of regional master plan as coordinated by PTS with corresponding working group.	▪ Participates in activities of regional planning and development of regional master plan in coordination with Regional System Market Operator.
Regional System / Market Operator			▪ Plays the role of Regional System Operator (and Market Operator). ▪ Coordinates and leads activities of regional planning and master plan
Regional Regulator			▪ Enforces the regional regulation ▪ Develops rules and regulations to be presented to the PTCOM for final approval. ▪ Participates in resolution of disputes as established by the Treaty.
Regional Institutions with Courts of Justice			▪ Provides its Court of Justice as forum for resolution of disputes

Table 4: Institutions and activities per stage

5.2. ROAD MAP FOR IMPLEMENTATION

The previous point establishes the activities that each institution (or program) should perform in each stage; and in doing so establishes the responsibilities of each institution.

This section presents a road map for the implementation of the NBI Power Trade; that is to say, the actions that are required in the near future to implement the proposed framework.

The implementation of the NBI Power Trade, as the multidimensional problem it is, is subject to several "ifs". The primary questions are those related to the removal of the barriers for such regional power trade implementation, as analyzed in Deliverable 4 [21], and those related to securing the resources, even when minimal at the beginning, to support the base work required for that [22].

Stage I, which is mainly a preparatory stage, can be organized in a logical sequence of activities with the time for their execution estimated. Stages II and III are currently less predictable.

5.2.1. STAGE I

The key milestones for Stage I are shown below, together with an initial estimation of the time required for their accomplishment.

1. Final NBI Power Trade Comprehensive Proposal, including the NBI Power Trade Treaty's first draft: approved by PTC end of 2007
2. Presentation of NBI Power Trade Project to the NBISEC
3. Presentation of NBI Power Trade Treaty and Action Plan to NBI - COM
4. NBI Power Trade Treaty signing by Member Countries
5. NBI Power Trade Treaty implementation
6. Working Groups terms of reference approval
7. Request to Member Countries to nominate Working Group Liaisons
8. Working Groups activities and meetings
9. Working Groups Final Reports
10. Cross – Border Trading Rules approval by Steering Committee
11. Cross - Border Trading Rules approval by PTCOM
12. Beginning of Stage II

[21] See Annex 4.

[22] See Annex 9 for a detail of resource requirements.

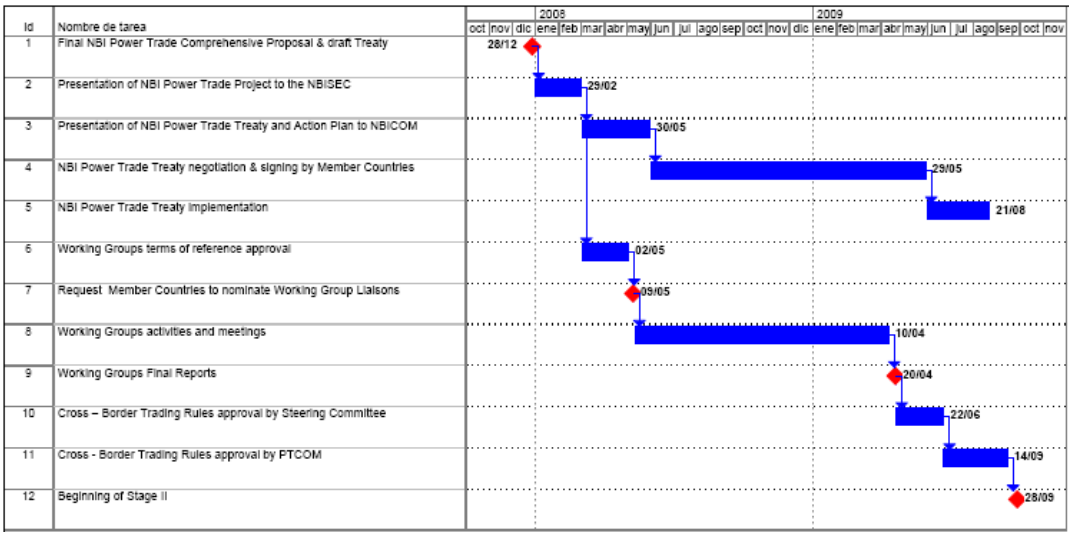

Figure 6: Road map for implementation

Although this is an ambitious plan, the experience already accumulated in the region through many relevant completed and on-going projects, may simplify the execution of the proposed steps, particularly those regarding the regional agreement by the countries through the Treaty.

VI TRADING RULES

1. NBI POWER TRADE – CONCEPT

NBI Power Trade is a platform to carry out electricity transactions among the Nile River recipient countries. In its initial stages, in those places where infrastructure allows it, there will be possibilities of having bilateral cross border transactions between countries. Once the infrastructure allows more interconnectors in the region, more complex transactions will be possible to exist, including multilateral transactions or transactions comprising third countries providing transmission services (transit) without participating in actual energy trading.

However, for the time being, it is not possible to conceptualize the NBI Power Trade as a regional power market; rather as a number of cross border transactions, initiated by the member counties, which over time will evolve into a multiple buyer and seller market.

2. NBI POWER TRADE – PHILOSOPHY & PRINCIPLES

The challenges for developing a power trade platform for the Nile River recipient countries have several dimensions:

- Ability to follow the infrastructure development.
    - Evolution from very limited cross border trading capacity to a fully integrated region, with its countries' networks interconnected, and also with links to other regional trading systems, such as SAPP, MAGREB and further north.
- Ability to properly address the fact that there are natural sub-regions in the Nile Basin Recipient countries. [23]
- Requirements for developing necessary infrastructure, the institutional framework and the rules to create a common space for the countries to develop their internal power sectors in conjunction with increasing bilateral and multilateral trading possibilities.
- The need to keep a proper balance between national interests and regional interests, by means of creating structures and trading mechanisms allowing the individual countries, or groups of countries, to choose whether to participate or not (or to what extent) in the NBI Power Trade. Benefits and fairness should be the main promoters of integration, not just mandatory rules.

3. TRADING ARRANGEMENTS GUIDELINES

The purpose of the Trading Arrangements is to:

- Ensure that the rules for the use of cross-border transmission capacity and trading will work together with efficient coordination and appropriate participation;
- Provide the framework for efficient, transparent and reliable electricity trading among participant countries;

[23] See Annex 4 for a discussion on barriers to power trade in the region and how to solve them.

- Set out the responsibilities of domestic utilities and System Operators in relation to trading, cross-border transmission operation coordination, economic dispatch of opportunity offers-bids, metering, settlement and payments;
- Regulate the economic and efficient dispatch within the reliability, security and quality standards harmonized among participating countries;
- Progressively harmonize the operation and pricing system of power transactions;
- Ensure an efficient, transparent and predictable settlement system and regulate payment obligations;
- Establish the principles for a governance mechanism;
- Provide a framework for the resolution of disputes among participant countries or agents; and,
- Provide an efficient and transparent process for amending the NBI Power Trade Regulation.

4. CONTENTS

The proposed rule guidelines for organizing the NBI Power Trade are organized according to the following points:

- Participants and Transactions
- Dispatch and Coordination Among System Operators
- Deviations
- Transmission System
- Metering

4.1. PARTICIPANTS AND TRANSACTIONS

4.1.1. PARTICIPANTS

Participants in the NBI Power Trade are all signatory countries of the NBI Power Trade Treaty. During Stage II participants are countries and transactions are agreed through the national TSOs. In Stage III, recognized market participants in any of the national power markets will be allowed to be participants in the NBI Power Trade.

During Stages II and III, only Participants will be able to conclude cross-border transactions that use national transmission systems.

4.1.2. TYPE OF TRANSACTIONS

There will be three types of transactions:

1. Bilateral contracts
2. Short term transactions
3. Support in emergencies

The following table shows the participants and transactions during each Stage.

	Stage I (Preparatory Stage)	Stage II	Stage III
Participants	• Countries.	• Contiguous countries	• Any two countries. • Recognized market participants at national levels.
Transactions	• Transactions continue as today. • New transactions take into account future developments of regional power trade.	• Bilateral contracts • Short term (agreed by TSOs) • Emergency	• Bilateral contracts • Day ahead (managed by Regional SO) • Emergency

Table 5: Participants and Transactions

4.2. BILATERAL CONTRACTS

Contracts will be physical, which means that the seller will be committed to deliver (generate) and the buyer will be committed to withdraw the contracted volumes.

Making the required transmission capacity available for contracted power to flow requires the development of an economically efficient mechanism for determining the transmission capacity needed and for allocating the available capacity among those willing to use it. If the system is facing congestion problems, it will also be necessary to establish rules to properly manage the limitations.

During Stage II, the maximum quantities that will be possible to cross-border trade will be those restricted by the cross-border transmission capacity.

During Stage III, the contracts will be able to be freely agreed by National Participants, however an important level of coordination between System Operators is required, so these transactions can be scheduled in each countries' internal markets, including transit on third party transmission networks.

National Participants must comply with national regulations. The parties of the contract will inform their respective SO daily on the volumes of power they wish to trade across the borders during each hour of the next day.

The national System Operator will prepare a daily schedule (day-ahead schedule) that will include the internal dispatch and the cross-border flows.

In case there are more requests for cross-border trading than what the transmission capacity allows, then the Congestion Management mechanisms will apply.

4.3. DAY AHEAD MARKET – SHORT TERM TRANSACTIONS

System Operators from contiguous countries will exchange daily offers-bids for selling and/or buying energy. During Stage II those offers will be directly established by the System Operators (according to national regulations), while during Stage III those offers will be

made by national participants, channeled through the System Operator to the Regional system / Market Operator. [24]

Although opportunity costs for bids and incremental costs for offers may seem fair, it is quite complex to verify these costs, particularly in systems that rely on a high percentage of hydro generation. Therefore it is recommended that free prices rather than opportunity or incremental costs be presented. Offers-bids will be valid for the day-ahead market.

The two trading countries' System Operators will accept the transactions whenever the selling price (offer) plus the costs of losses is lower than the buying price (bid). The System Operators of both countries will acknowledge the quantities (blocks of energy specified as amount of power in a certain period) and prices that are finally agreed upon for to trade during the day-ahead market.

Offers that are accepted will be included by the System Operators of each country in their respective national daily load dispatch schedules.

For these short-term opportunity transactions, System Operators must be able to determine the available cross border transmission capacity, in excess of the capacity already committed by Bilateral Contracts.

System Operators will be responsible for keeping the cross border flows within the scheduled values.

4.4. SUPPORT DURING EMERGENCIES

In addition to scheduled transactions, the System Operators will be allowed to agree to short-term energy transactions during emergency events in one of the countries. Support during emergencies will consist basically of modification of the power flows in the cross border lines, in order to meet the urgent needs of one of the contiguous countries. These modifications will imply deviations from the power exchange schedule agreed in the day-ahead market and settled according to the provisions for deviation settlements.

From the operational point of view, the System Operators will periodically have to agree procedures for this kind of support during emergencies (communications protocols, limits, etc.). The support of one country to another in emergencies will be contingent upon the ability to maintain security of supply in the first country (i.e. non-firm), unless the conditions are agreed differently in a bilateral contract with a provision for firm supply. [25]

4.5. DISPATCH AND COORDINATION AMONG SYSTEM OPERATORS

The implementation of a market based on bilateral contracts does not require profound changes in national regulations, but a tight coordination among System Operators is essential.

Each national System Operator will be responsible to resolve all imbalances using all means possible, activating local resources including reserves and ancillary services. [26]

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[24] Annex 10 presents a "Standard Agreement" for trading during Stage II.

[25] Annex 10 proposes a "Standard Agreement for Trading" containing the procedures for support in emergencies.

[26] Annex 10 proposes a "Standard Agreement for Trading" containing the procedures for operation during cross border trading.

- The System Operators may agree to modify the schedules to maintain the reliability, security and quality of service and/or under emergencies to restore the integrity of the system. When emergencies need to be solved immediately, one of the System Operators may decide to reduce the cross-border flow, but the other System Operators must be notified immediately.

- When a System Operator is unable to follow a planned cross-border schedule due to technical reasons or unexpected conditions, that country's System Operators shall inform immediately the SO of the other countries as soon as the new condition arises.

- Deviations will be settled according to the proposed mechanisms included later in this section.

- It is recommended that the results of the transactions be made public in order to increase transparency. This information may be published in the Regional web site.

- Post-operation activities

    a. Metering information exchange and validation

    b. Calculation and Settlement of deviations

    c. Post-operation information exchange

- Other periodic activities

    a. Organisation of monthly and annual Transmission Rights auctions

    b. On-going training

4.6. DEVIATIONS

During real time operation System Operators should meter the actual flows, in order to identify deviations from the day-ahead schedule. During Stage III, deviations will in any case be attributed to countries, not to national Participants.

In the case of cross border trading, each country operates as a control area, and deviations are measured on cross border interconnectors. At a regional level it is possible to meter the individual countries' total deviations (the sum of deviations in all the cross border interconnectors). If the system was kept stable, total regional deviation should be zero-sum: some countries would compensate the deviations of others. However, identification of the parties responsible for deviations would require auditing all regional Market Participants instructed and uninstructed deviations.

Once a deviation occurs, national System Operators, under the national regulations, have to detect the origin of that deviation, and identify which of the national participants is responsible for it. According to national rules, the responsible party will have to bear the cost of deviations arising from non compliance of actual power injection/withdrawal with the national day-ahead schedule.

Deviations in cross-border electricity exchanges between contiguous countries occur every time the physical flows between these systems do not coincide with the corresponding schedules. These schedules are typically compiled on the basis of the transactions nominated by market participants (Stage III), and with any exchange planned by the involved System Operators.

There are essentially two different ways to handle deviations:

- Financial compensation
- In-kind compensation

4.6.1. FINANCIAL COMPENSATION

Approaches based on financial compensation involve assigning a value to cross-border deviations. A valuation mechanism is therefore required. Those mechanisms are a natural extension of national valuation mechanisms.

In national regulation with market-based balancing mechanisms, the prices for balancing energy determined by these mechanisms could be used as references; even though additional problems may arise regarding the relativity of these prices. Where market-based balancing mechanisms do not operate, a regulated price for balancing energy could be used. This method, however, is unlikely to provide an accurate valuation of the costs involved for the SO managing these deviations.

Based on the above issues, we do not recommend the financial compensation option since:

- financial settlement requires organized and liquid markets, which is not the case in the Nile Basin Region;
- regulated prices will probably not compensate properly for the cost incurred by System Operators that balance the system;
- inaccurate compensation prices may provide incentives for gaming against countries that provide a "cheap" balancing service;
- it would be necessary to verify that all the System Operators are willing to share their internal operational information with other SOs for identification of uninstructed deviations.

4.6.2. COMPENSATION IN KIND

This approach requires the definition of a "reference period" and a corresponding "compensation period". Deviations during the reference period are compensated by appropriately adjusting the scheduled exchanges in the compensation period.

For example, the reference period could be defined as each day (t), and the corresponding compensation period could be a day, seven days later (t+7)[27]. Deviations from schedules between two control areas during day t would be algebraically added up to define the total net daily deviation. A compensatory planned deviation, equal in magnitude but opposite in sign, would be added to the exchange schedules of day t+7.

A more refined version of a settlement system based on compensation in kind may define the reference periods – and the corresponding compensation periods – taking into account the fact that electricity may likely have different values at different times of a day and in different days of a week.

We recommend this in-kind compensation method for the initial stages of the NBI Power Trade.

[27] The choice of a compensation period seven days away from the reference period could be justified by the many similarities, in an electrical sense, between homologous week days.

4.7. TRANSMISSION SYSTEM

In a regional market, there is a clear need for participants, either countries like in Stage II or agents during Stage III, to be informed on the available cross-border transmission capacity.

As this transmission capacity involves the transmission capacity of two or more countries, a harmonization of the concepts and procedures used to calculate the cross border transmission capacities is therefore required. This level of harmonization enables participants to anticipate and plan their cross border transactions, and allows System Operators to manage these international electricity exchanges.

The complexity of physical calculations (and the need of transparency) clearly indicates that System Operators should be responsible for carrying out this task in a fair and non-discriminatory way. Methodologies to do so and reporting requirements must be part of the Regulation.

During Stage II, cross border transactions will not pay for transmission services. This conclusion is based on the fact that in bilateral transactions involving only two contiguous countries, each country employs its own transmission system for the cross border transactions, and therefore there is no need of allocating transmission costs for each country.

On the national level, participant countries may decide to compensate the transmission system owner for the use of those installations by internal participants for cross border transactions, but this is something within the national domain and governed by local regulation.

During Stage III, and unless/until transits grow to occupy a significant volume of energy flows, it is recommended to leave the interested parties to negotiate with the transmission owner of the third country providing transit services for the way those costs, including losses, will be compensated.

In most of the regional markets, compensation for transits is treated in a simplified way, due to the high complexity required to implement allocation mechanisms that reflect the exact network use. Those mechanisms are based on a sort of postage stamp criteria[28], which divide the total costs of the networks that can be identified as part of the regional trading among all member countries These total costs, including capital, operation and maintenance and losses, are assigned to each country based on simple criteria, like peak demand or installed capacity. Because this postage stamp method is so effective while remaining simple, it is therefore recommended to postpone a type of regulated compensation mechanism until transits in the region has reached a significant volume of activity.

It is possible that the problem of congestion may arise During Stage III. The most common case of congestion occurs when the flow on a line is above the maximum power allowed to transit, determined by thermal limits, voltage drop or stability limits. Congestion is associated with a specified point in time. As such, congestion may occur during the day-ahead schedule or real-time operations of the system.

With the development of more mature markets (with many participants competing for the use of the resources and for capturing demand) the term “congestion management” takes on a more complex and comprehensive meaning. It includes the allocation of available transmission capacity to participants with the target to avoid those ex-ante transactions that may produce congestion. In the case of cross-border trading between contiguous countries,

[28] The Postage Stamp methodology is widely used in transmission pricing, and consists of dividing the total costs estimated for compensating fixed transmission costs (used for transits) among all countries, according to a proportionality criterion. The Postage Stamp is widely used because it is an efficient alternative for allocating those transmission costs, and it is a simple and transparent method. Proportionality criteria are normally based on historical net exports plus imports. Internal regulation will allocate the costs to each country’s agents.

congestion management on cross-border transmission capacity requires a mechanism to allocate available capacity.

The trend in many cross border trading markets is to use explicit auctions to allocate the cross border transmission capacity to the participants. These auctions will grant market participants the right to use the cross border transmission capacity between a pair of neighboring countries for cross border transactions.

Explicit auctions will be used to allocate the "right" to transfer power between two control areas (countries) among the active participants. Participants that are interested in entering into bilateral agreements with other countries' participants will request these rights.

We recommend that auctions mechanisms be developed for allocation of physical transmission rights, which will be coordinated and implementer by the Regional System Operator. These mechanisms should be prepared and ready for implementation by the start of Stage III.

4.8. METERING

Cross-border traded energy is normally metered by the same metering system used by the national power sector (for internal transactions), complemented with additional metering points at the border which will be specifically used for settlement of cross border trading.

However, metering devices and procedures required to measure the real values of the cross-border traded energy need to be homogeneous. A level of harmonization and normalization of the technical requirements involving meters that intervene in determining traded amounts is thus needed.

The most practical approach to harmonization in this area is for countries to agree that the technical specifications and measuring procedures will be common and mandatory under the current process of market integration[29].

A transitional period, with transitional metering specifications, is extremely useful in order to allow the countries to adjust their metering systems to the new requirements. The aim of this transition period is to allow countries to use existing meters (used for local system purposes) for cross-border flow metering, and yet give a reasonable milestone by which new meters that match the regional specifications for cross border trading (which should be few) be installed and the new metering procedures be implemented.

5. "PRICE VS. COST" BASED OFFERS AND BIDS

The proposal for regional economic dispatch considers that transactions will be based on price offers and bids rather than on variable costs. Offers/bids will be presented by domestic utilities and, perhaps in some countries, by other market participants. Although the use of variable costs would ensure a minimum cost solution, offers and bids based on variable costs require a regulatory control in order to assure compliance.

International experience shows that it can be an extremely complex process to establish regulatory basis for setting the criterion and then ensure the regulatory oversight. Control is usually based on accounting systems and auditing processes to ensure cost-reflective offers-bids, which is very difficult to implement.

[29] Another approach, establishing a methodology for identifying which meters in each country are used for this purpose, is more complicated and time consuming than is recommended, and introducing an unnecessary number of irrelevant variables to the standardization process.

For example, when plants use oil by-products or some other commodity with an international price, it could be possible to design a procedure to estimate “efficient” variable costs. But for indigenous resources dedicated to a particular plant, for instance lignite or gas, it is extremely complex to determine variable costs because: (1) in most of the cases the development of the indigenous resource is possible because its economic feasibility is linked to the power plant, and thereby it is not possible to use international prices for pricing the fuel; (2) most of the costs associated to the fuel production are fixed, and arbitrary assumptions have to be introduced for setting and auditing variable costs.

For hydro plants, which are one of the main power resources in the region, it is not simple to set an opportunity cost for the water. Although there are methods extensively used to set the “water value”, these methods require detailed information on fuel costs and an assessment of the social value of loss (un-served) load (VOLL). This last parameter is highly dependent on the particular economical and social characteristics of each country, and its estimation introduces some level of arbitrariness. This means that auditing the water value is also difficult.

Finally, variable costs arise not only from fuel costs, but also from the costs of starting-up generation units, as well as O&M expenses. Desegregation between fixed and variable O&M costs also introduces a high level of arbitrariness.

On the other hand, price-based offers and bids are effective in markets with high levels of competition, where participants are encouraged to offer-bid their actual variable costs to maximize profits. Although this is not the case for the NBI countries during the first stages, the relatively small volume of cross-border opportunity transactions in relation with internal demands will mitigate the potential increase of price offers to excessive levels. The rule for selection of offers and bids also discourages the offering of excessive prices.

For these reasons it is recommended to use price-based offers-bids for regional dispatch, rather than variable costs. By using price offers each participant can internalize all costs, including the criteria used to estimate actual variable costs. At the same time, minimum regulatory control is necessary.

VII DISPUTE RESOLUTION

1. GENERAL ASPECTS

Resolution of disputes is an issue which is present in any power trading framework. Whenever there are commercial transactions, disagreements that may arise must be somehow solved. These disagreements may be of very different types and so the system for settling them must be flexible, encompassing and, most importantly, it must be credible. The procedure for settling disputes must be trusted by the private sector; otherwise it will introduce a risk which will have negative effects: either private capital does not participate or private capital introduces an unbearably high "risk premium" in the demand for a high return on invested capital. None of the alternatives is desirable.

International experience shows that arbitration in courts such as Paris, London, and New York under ICC (International Chamber of Commerce) rules for example is the most acceptable dispute resolution method for the private sector.

2. MECHANISM FOR RESOLUTION OF DISPUTES

A procedure for dispute resolution in the case of power trade in the Nile Basin will be necessary from Stage II [30] onwards. During Stage I, preparatory activities will be carried out and trade will continue as today.

Therefore, it is during Stage II that a mechanism for resolution of disputes may be needed. Even if trading is "simple" - country-to-country and between neighbouring countries - disputes will likely arise.

During Stage III when trading is more sophisticated a dispute resolution mechanism is indispensable.

The proposed steps for proposed dispute resolution mechanism are:

1. Once a dispute has risen, efforts should be made by the parties to solve their differences in an amicable way through discussions. This should be carried out formally by a team of two or three persons per party during a reasonable period of time (for example 15 days). Only once these conversations have taken place and have not succeeded they should pass to the second stage.

2. If the first rounds of discussions fail, parties should take the dispute to the Regional Regulator (or the Power Trade Secretariat if the Regional Regulator is not yet established). Here discussions should be carried out with the mediation of the Regulator to try amicably to solve the dispute. If after a reasonable period of time (for example 30 days) no amicable solution is found, then an arbitration process should be followed.

3. The arbitration process can be held at the Court of Justice of one of the existing regional institutions if both parties agree so, or if they do not agree to a regional institution arbitration will be held in one of the international courts (Paris, London or New York, etc.). The rules for arbitration will be those of the ICC. If there is no agreement on the court where arbitration is held, then the Regional Regulator will establish the court among the international courts already mentioned.

The next figure illustrates the process described above.

[30] Annex 10 proposes a "Standard Agreement for Trading" containing the procedures for dispute resolution until the Regional Regulator is established.

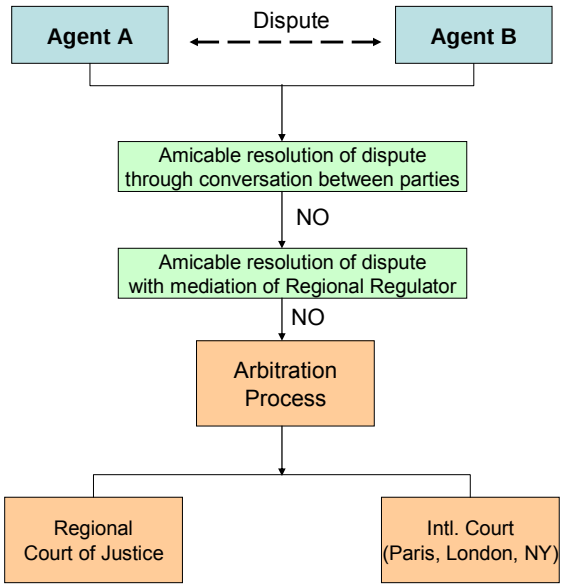

Figure 7: Dispute Resolution Mechanism

3. THE ARBITRATION PROCESS IN AN INTERNATIONAL COURT

3.1. INITIATION OF THE PROCESS

Dispute resolution involving international arbitration often involves three steps.

- The first step is usually for representatives of the disputing parties to be appointed for purposes of formalized but amicable discussions on how the dispute may be resolved though compromise. These efforts generally involve both sides preparing written summaries of their respective positions regarding the dispute, after which official representatives of such parties meet formally to discuss the merits of their respective positions and alternative means for resolving the dispute.

- Second, in the event that the dispute involves a highly technical matter and resolution is unable to be reached through amicable discussions between the parties, such disputes are often referred to an 'expert' for resolution.

- Third, where matters are not technical in nature and amicable resolution is not possible, disputes are resolved by submission to a panel of arbitrators (often referred to as an 'arbitration tribunal').

It is important to recognize that international arbitration is a consensual agreement between parties on how disputes are to be resolved. Thus, the requirements regarding the scope and substance of arbitration are specified through a contractual agreement between parties.

3.2. COMPOSITION

Arbitration panels are generally composed of three, or another odd number of arbitrators. Generally, the opposing sides of a dispute will each appoint an equal number of arbitrators, with those arbitrators being charged with the selection of the last arbitrator who then serves as chairman of the arbitration tribunal. The agreement between the parties governing dispute resolution (in this case the "Treaty") should specify the process for selection of the arbitrators and any qualifications required to be satisfied by them. In cases where the parties conclude that selection of arbitrators may be difficult (such as when there are more than two sides to a dispute), the arbitrators may need to be appointed through the procedures of one of the internationally recognized arbitration organizations, such as the ICC, the United Nations Committee of International Trade and Commerce (UNIITRAL), the London Centre of International Arbitration, or in the case of the NBI, by the Regional Regulator.

3.3. RULES AND PROCEDURES

The agreement between disputing parties governing international arbitration (the Treaty) should specify the rules and procedures that will govern the arbitration. Generally, the rules of one of the internationally recognized arbitration organizations (ICC, UNITRAL, etc.) are used for these purposes. These rules specify the arbitration procedures, timing requirements, the powers and authorities of the arbitration tribunals and the court's supervisory responsibilities.

3.4. VENUE AND LANGUAGE

The agreement between the disputing parties governing international arbitration (the Treaty) should specify the venue for arbitration. Generally, parties insist that arbitration be conducted at a venue neutral to all of the disputing parties. This could be achieved by either specifying a location outside of the region or by leaving the selection of a neutral venue to the relevant arbitration tribunal. The Treaty should also specify the language in which the arbitration is to be conducted.

3.5. EFFECT OF ARBITRATION AWARDS

Barring fraud or corruption, decisions of experts and arbitration tribunals are generally final and binding. To achieve this result, the Treaty should specify that arbitration awards are final and binding and the Parties should waive their right to appeal arbitration decisions to the courts.

3.6. ROLE OF NATIONAL JUDICIAL SYSTEMS (THE COURTS)

Since the decisions of experts and arbitrators are generally intended to be final and binding, the role of national courts in resolving disputes is very limited. Generally, courts are permitted to serve two different roles.

- First, arbitration awards involving commercial disputes generally have to be enforced through the judicial system of the country where the losing party to a dispute is located (because it is where that party's assets are located). Thus, to the extent that a dispute involves a commercial dispute where there are monetary awards made by the arbitrator, such awards will have to be enforced through the applicable national judicial system. In such cases, however, the role of the courts is simply to enforce the arbitration award and not to second guess or review the substance of the arbitration award.

- Second, the agreement governing international arbitration (the Treaty) usually permits the disputing parties to obtain injunctive relief to protect or enforce their

contractual rights, particularly when the actions of one of the disputing parties threatens to cause irreparable harm to the other party before the issue can be resolved through arbitration.

VIII RESOURCES

Annex 9 – Deliverable 11 presents a detail of the Training Needs Assessment and evaluation of resources (human, infrastructure, facilities, etc) needed for the establishment of the proposed power trade model.

The following table presents a quantification (in US$) of the financial resources needed in the first years (Stage I and Stage II) for the establishment of the power trade model.

	Stage I		Stage II	
(US$)	Year 1	Year 2	Year 2	Year 3
Activity		(9 months)	(3 months)	
Negotiate text & get approval of Treaty	**178500**			
Expenses	58500			
Consultancy services	120000			
Power Trade Secretariat	**728200**	**518400**	**172800**	**691200**
Expenses	728200	518400	172800	691200
Consultancy services				
Cross border trading rules	**559200**			
Expenses	59200			
Consultancy services	500000			
Operational procedures & Technical standards	**360400**			
Expenses	110400			
Consultancy services	250000			
Regional Data Base	**188100**	**29600**		**29600**
Expenses	38100	29600		29600
Consultancy services	150000			
Training	**1850000**	**925000**	**367500**	**1102500**
Expenses	1850000	925000	367500	1102500
Consultancy services				
Steering Committee	**29600**	**14800**	**14800**	**29600**
Expenses	29600	14800	14800	29600
Annual meeting of Ministers	**57700**			**57700**
Expenses	57700			57700
Consultancy services				
Transmission capacity & allocation			**57400**	**172200**
Expenses			7400	22200
Consultancy services			50000	150000
Studies for establishment of regional SO/MO			**48600**	**145800**
Expenses			11100	33300
Consultancy services			37500	112500
Dispute resolution mechanism			**32400**	**97200**
Expenses			7400	22200
Consultancy services			25000	75000
Studies for establishment of regional regulator			**57400**	**172200**
Expenses			7400	22200
Consultancy services			50000	150000
TOTAL	**3.951.700**	**1.487.800**	**750.900**	**2.498.000**
Expenses	2.931.700	1.487.800	588.400	2.010.500
Consultancy services	1.020.000		162.500	487.500

Table 6: Evaluation of resources needed

The following considerations are applicable to Stage III:

Budgeting for training during the different stages is taken directly from the TNA. Here below it is presented a summary of the costs corresponding to Stage III.

For Secretariat, Working Groups, Etc.		US$
Stage I	Stage sub-total	1.570.000
	Conference / Seminars	210.000
	Workshops	1.050.000
	Study Tours	300.000
	On-the-job Training	115.000
For National Participants		**US$**
Stage I	Stage sub-total	105.000
	Workshops	105.000
TOTAL		1.675.000

Table 7: "Training" Budget Stage III

In addition, budgets for the following items but also be considered:

- Power Trade Secretariat: US$ 691.200 estimated per year
- Steering Committee: US$ 29.600 estimated per year.
- Annual meeting of Ministers: US$ 57.700 estimated per year
- Regional Regulator: US$ 1.340.00 estimated for first year (though this budget will be estimated precisely by the corresponding consultancy).
- Regional System / Market Operator: this budget will be estimated by the proposed consultancy.

IX APPENDIX I: ALTERNATIVE ARTICULATION OF INSTITUTIONS

The following picture shows an alternative organisation of institutions in the NBI Power Trade.

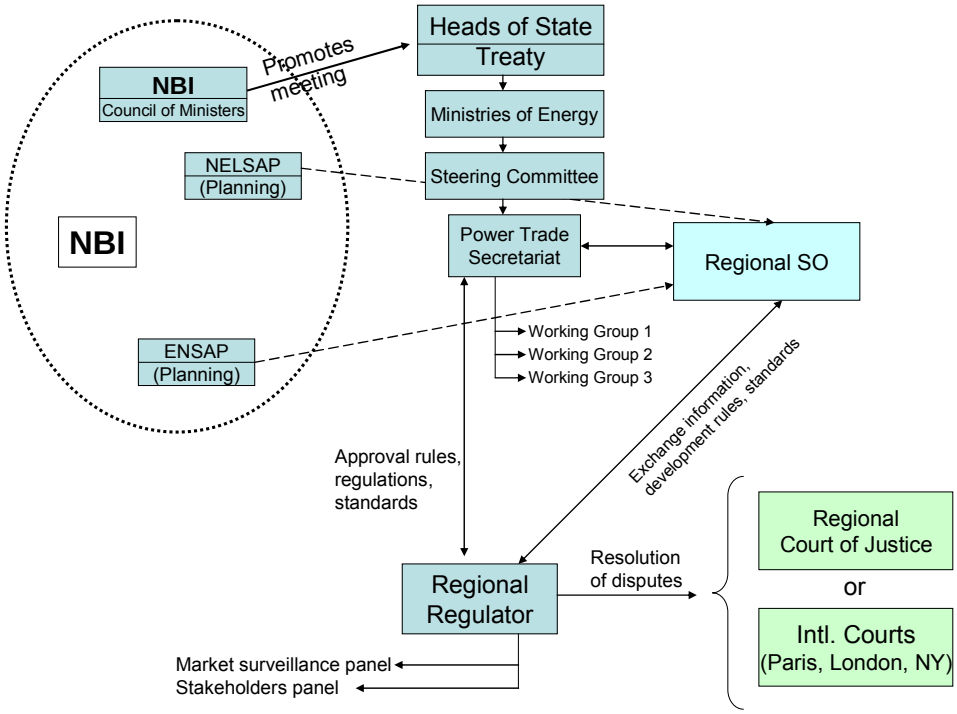

Figure 8: Articulation of Institutions – Alternative Annex II

In this organisation the NBI COM promotes the signature of the Treaty by the countries' Heads of State. This Treaty is the basis for the development of the entire framework.

ENSAP and NELSAP participate in regional planning together with the corresponding working group and coordinated by the PTS in Stages I and II. During Stage III the Regional System / Market Operator is the responsible party for the task, and therefore for the necessary coordination.

In this organisation the NBI Power Trade is totally independent from NBI.

X APPENDIX II: TERMS OF REFERENCE FOR WORKING GROUPS

1. CROSS BORDER TRADING RULES WORKING GROUP

a) Objectives

Adjust the initial set of Cross-Border Trading Rules and submit them to the Power Trade Secretariat. The Secretariat will submit them for official approval and convert them into enforceable rules for all member country signatories of the NBI Power Trade Treaty.

b) Activities

1. Analyse the guidelines and broad contours of the trading rules proposed in the current Consultancy.
2. Refine those proposed and arrive at an agreement among the member countries on the actual principles and guidelines.
3. Define terms of reference for a consultancy that will develop the actual trading rules and regional grid code in detail.
4. Be the counterpart to and work in close collaboration with the trading rules/regional grid code consultancy.
5. Analyse results of consultancy and agree on a final version of trading rules and grid code.
6. Propose the final version of trading rules and grid code to the Power Trade Secretariat.

c) Products

a) First report to Power Trade Secretariat on final guidelines and principles for trading rules and grid code.

b) Terms of reference of trading rules/regional grid code development consultancy.

c) Final proposal of trading rules and grid code.

d) Membership

The “CROSS BORDER TRADING RULES” working group members will include:

- One senior technical specialist from each country that will attend the meetings scheduled in the working group work plan. S/he will represent the country in these meetings and will be the Chair of the local team organised in the country to carry out the required tasks.

- A team of senior technical specialists as deemed necessary by the country which will be led by the professional attending the meetings. This team will perform the required tasks at country level.

- Any other lead specialist approved by the PTS

e) Observers and invited guests

Observers and invited guests may be included in the working group meetings. The guests may be proposed by the working group to the PTS. The proposal of guests must be approved by the PTS for them to be part of the working group meetings. The PTS may add guests or observers to the working group's meetings.

f) Delegation of Alternate

- Should the representative of the country be unable to attend a scheduled meeting, s/he will ensure that an appropriately senior alternate is appointed and empowered to do so and take the corresponding decisions.

- The country will officially notify the substitution to the PTS.

- Delegation of an alternate must be communicated to the PTC well ahead of the working group meeting.

- Continuity with and knowledge of the working group's activities is key to selecting suitable alternates.

g) Quorum

A quorum of the working group meeting shall consist of two-thirds of the members.

If quorum is not achieved in a scheduled meeting, the working group may proceed with deliberation of its meeting but shall circulate the minutes of the meeting to the absentee members of the working group for their concurrence in order to reach any decisions needed.

h) Officers

- The working group will designate a group Chairperson and Alternate Chairperson in its first session of the first meeting.

- The designation must be made by at least two-thirds of the member countries.

- A representative of the PTS will attend this first session of the first meeting and will acknowledge of the decision made by the working group.

- If for any reason during the working group activities the Chairperson can not continue chairing the working group meetings, the Alternate Chairperson will occupy the position of Chairperson and another alternate will be designed by the working group immediately.

i) Meetings

- The meetings of the working group will be established in the work plan. Prior to the close of a meeting, the precise date of the next meeting will be decided. This date will be included in the minutes of the meeting.

- The meetings of the working group shall not be open to the public.

j) Venue

- Venue of the meetings can be any of the member countries.

- Venue of the meetings will be proposed by the PTS and approved by the countries in the meeting.

- The venue of the next meeting must be part of the minutes of a meeting.

k) Working Language

Working group meetings will be held in English.

l) Order of Business

The following order of business will generally be followed. The working group can modify the order of business as found necessary.

- Call of order by Working Group Chairperson

- Roll call of members present

- Opening Statements

- Reading of minutes and matters arising of the last meeting

- Approval of agenda for current meeting

- Discussions

- Adoption of the minutes of the meeting and Decisions
- Announcements

m) Records and Documentation

- The working group will prepare the documents and reports according to the its respective terms of reference. These documents, as well as the minutes of each meeting will be sent to the PTS for filing and circulation as necessary. There will be provision for translating key working documents in to French.
- Minutes of the working group meetings will be endorsed by the meeting and signed by assisting representatives of countries.
- The signed minutes of the working group meeting will be sent within two weeks after the meeting to the working group representative and the observers present (if any).
- Any discrepancy found in the final version of the minutes will be adjusted at the next working group meeting.

n) Communication

- The main method of communication is through electronic mail (e-mail).
- Working group country representatives shall promptly acknowledge communications from the PTS or from the working group Chairperson.

o) Decisions

- The working group decisions shall be made on a consensus basis.
- If however a consensus cannot be reached after a reasonable discussion, the working group Chairperson may decide to take a decision if at least two-thirds of the member countries approve it.
- If no consensus is reached, it must be stated clearly in the minutes.
- If no consensus is reached in a specific point, the part(s) in minority may produce a minority report.

- The Chairperson of the working group will keep the PTS regularly updated on the working group's activities via electronic mail and will inform of the progress of the activities established in the working group's terms of reference.

- In case there are changes required in the terms of reference / work program, the Chairperson will notify the PTS of the proposed change and request their endorsement via electronic mail. The PTS will have two full working weeks to reply.

- If no objections to the proposed changes are received during that two-week period, the Chairperson will proceed according to the proposed change and communicate so to the rest of the working group members.

- If the PTS raises questions about proposed changes within that two-week period, the working group Chairperson and the PTS will make contact by phone or e-mail to try to overcome the difficulties. No change to the working group terms of reference or work plan will be effective until approval of the PTS.

p) Amendment

These Rules of Procedure can be amended by a decision of the working group taken by a two-thirds majority of the members and approval of PTS.

q) Effectiveness

These Rules of Procedure shall be effective for the first meeting of the working group.

2. SYSTEM EXPANSION PLANNING WORKING GROUP

a) Objectives

For Stage I, establish the communication protocols through which the NBI member countries exchange their expansion plans, and prepare the system expansion planning procedures for Stage II.

For Stage II, to develop integrated regional system expansion plans (basin and sub-basin level) identifying investment opportunities to be proposed to the member countries.

b) Activities

1. Analyze planning procedures in each country, and prepare a communication protocol describing information to be included, forms to be employed, timing, etc.
2. ensure that all countries submit the information in proper form and time
3. prepare new procedures to be employed for integrated regional planning during Stage II
4. submit procedures to the NBI PTS for approval (according to approval mechanisms foreseen in the Treaty).
5. conduct yearly plans/plan updates to be proposed to the NBI PTS
6. revise and adjust plans as per the request of the countries or the NBI PTS

c) Products

1. Regional System Expansion Planning Procedures for Stages I and II
2. national system plans circulated among all member countries
3. yearly integrated system expansion plans identifying investment opportunities of interest to the member countries at basin and/or sub-basin level
4. terms of reference and recruitment criteria for hiring technical assistance consultants

d) Membership

The "SYSTEM EXPANSION PLANNING WORKING GROUP" working group members will include:

- One senior technical specialist from each country that will attend the meetings scheduled in the working group work plan. S/he will represent the country in these meetings and will be the Chair of the local team organised in the country to carry out the required tasks.

- A team of senior technical specialists as deemed necessary by the country which will be led by the professional attending the meetings. This team will perform the required tasks at country level.

- Any other lead specialist approved by the PTS

e) Observers and invited guests

Observers and invited guests may be included in the working group meetings. The guests may be proposed by the working group to the PTS. The proposal of guests must be approved by the PTS for them to be part of the working group meetings. The PTS may add guests or observers to the working group's meetings.

f) Delegation of Alternate

- Should the representative of the country be unable to attend a scheduled meeting, s/he will ensure that an appropriately senior alternate is appointed and empowered to do so and take the corresponding decisions.

- The country will officially notify the substitution to the PTS.

- Delegation of an alternate must be communicated to the PTC well ahead of the working group meeting.

- Continuity with and knowledge of the working group's activities is key to selecting suitable alternates.

g) Quorum

A quorum of the working group meeting shall consist of two-thirds of the members.

If quorum is not achieved in a scheduled meeting, the working group may proceed with deliberation of its meeting but shall circulate the minutes of the meeting to the absentee members of the working group for their concurrence in order to reach any decisions needed.

h) Officers

- The working group will designate a group Chairperson and Alternate Chairperson in its first session of the first meeting.

- The designation must be made by at least two-thirds of the member countries.
- A representative of the PTS will attend this first session of the first meeting and will acknowledge of the decision made by the working group.
- If for any reason during the working group activities the Chairperson can not continue chairing the working group meetings, the Alternate Chairperson will occupy the position of Chairperson and another alternate will be designed by the working group immediately.

i) Meetings

- The meetings of the working group will be established in the work plan. Prior to the close of a meeting, the precise date of the next meeting will be decided. This date will be included in the minutes of the meeting.
- The meetings of the working group shall not be open to the public.

j) Venue

- Venue of the meetings can be any of the member countries.
- Venue of the meetings will be proposed by the PTS and approved by the countries in the meeting.
- The venue of the next meeting must be part of the minutes of a meeting.

k) Working Language

Working group meetings will be held in English.

l) Order of Business

The following order of business will generally be followed. The working group can modify the order of business as found necessary.

- Call of order by Working Group Chairperson
- Roll call of members present
- Opening Statements

- Reading of minutes and matters arising of the last meeting
- Approval of agenda for current meeting
- Discussions
- Adoption of the minutes of the meeting and Decisions
- Announcements

m) Records and Documentation

- The working group will prepare the documents and reports according to the its respective terms of reference. These documents, as well as the minutes of each meeting will be sent to the PTS for filing and circulation as necessary. There will be provision for translating key working documents in to French.
- Minutes of the working group meetings will be endorsed by the meeting and signed by assisting representatives of countries.
- The signed minutes of the working group meeting will be sent within two weeks after the meeting to the working group representative and the observers present (if any).
- Any discrepancy found in the final version of the minutes will be adjusted at the next working group meeting.

n) Communication

- The main method of communication is through electronic mail (e-mail).
- Working group country representatives shall promptly acknowledge communications from the PTS or from the working group Chairperson.

o) Decisions

- The working group decisions shall be made on a consensus basis.
- If however a consensus cannot be reached after a reasonable discussion, the working group Chairperson may decide to take a decision if at least two-thirds of the member countries approve it.

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p) Amendment

These Rules of Procedure can be amended by a decision of the working group taken by a two-thirds majority of the members and approval of PTS.

q) Effectiveness

These Rules of Procedure shall be effective for the first meeting of the working group.

3. OPERATIONAL PROCEDURES AND SYSTEM TECHNICAL STANDARDS WORKING GROUP

a) Objectives

- Propose the required technical standards harmonization as to make the parallel operation of neighbouring power systems viable.
- Develop technical procedures to be employed in cross-border operation, including operational planning, on-line operation and post operation matters.

b) Activities

Technical Standards

1. Define the relevant technical standards for cross border trading needed for control in each country (basically standards regarding safety, security, reliability, and quality of service).
2. Review the standards that are being used in each of the Nile Basin countries.
3. Define the objectives for the technical standard values of that must be met in the long term.
4. Establish a schedule to achieve the objectives in an agreed period of time.
5. Determine the modifications and minimum investment necessary in each country.

Procedures

Develop the procedures to be employed in cross border trading including (but not limited to):

Programming

Scheduling

Communication

On-line operation

Re – scheduling

Emergencies

Post – operation

Analysis of emergencies

Information generation, processing and data bases, reporting

c) Products

Technical Standards

A report containing: the current situation of the technical standards in each country, the long term objectives to be met in terms of standards harmonization in the region, and a road map to achieve the objectives in a defined period of time.

Procedures

A report containing the details of each of the procedures submitted to the Power Trade Secretariat to be approved and enforced.

d) Membership

The "OPERATIONAL PROCEDURES AND SYSTEM TECHNICAL STANDARDS" working group members will include:

- One senior technical specialist from each country that will attend the meetings scheduled in the working group work plan. S/he will represent the country in these meetings and will be the Chair of the local team organised in the country to carry out the required tasks.

- A team of senior technical specialists as deemed necessary by the country which will be led by the professional attending the meetings. This team will perform the required tasks at country level.

- Any other lead specialist approved by the PTS

e) Observers and invited guests

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i) Meetings

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- The meetings of the working group shall not be open to the public.

j) Venue

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- Venue of the meetings will be proposed by the PTS and approved by the countries in the meeting.
- The venue of the next meeting must be part of the minutes of a meeting.

k) Working Language

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l) Order of Business

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- Roll call of members present
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p) Amendment

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q) Effectiveness

These Rules of Procedure shall be effective for the first meeting of the working group.

4. CAPACITY BUILDING NATIONAL COORDINATION WORKING GROUP

a) Objectives

Propose and harmonize capacity building programs aimed at increasing the professional skills of individuals participating in the national power sectors

b) Activities

1. Analyse the current consultancy's proposed capacity building recommendations.
2. Adjust the programs if deemed necessary.
3. Define the schedule for carrying out the different activities.
4. Coordinate the implementation of the agreed programs according to the agreed schedule in each country and with the PTS.
5. Define a periodic update of the training and capacity building programs.
6. Carry out a periodic update of the training and capacity building programs according to the needs in the region.
7. Implement the updated training and capacity building programs.

c) Products

1. Operative plan to begin training and capacity building in the region.
2. Coordination of the agreed training and capacity building plan in each country.
3. Periodic update of training and capacity building needs assessment and implementation plan.

d) Membership

The "CAPACITY BUILDING NATIONAL COORDINATION" working group members will include:

- One senior technical specialist from each country that will attend the meetings scheduled in the working group work plan. S/he will represent the country in these meetings and will be the Chair of the local team organised in the country to carry out the required tasks.
- A team of senior technical specialists as deemed necessary by the country which will be led by the professional attending the meetings. This team will perform the required tasks at country level.
- Any other lead specialist approved by the PTS

e) Observers and invited guests

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f) Delegation of Alternate

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g) Quorum

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h) Officers

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i) Meetings

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- The meetings of the working group shall not be open to the public.

j) Venue

- Venue of the meetings can be any of the member countries.

- Venue of the meetings will be proposed by the PTS and approved by the countries in the meeting.

- The venue of the next meeting must be part of the minutes of a meeting.

k) Working Language

Working group meetings will be held in English.

l) Order of Business

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- Discussions

- Adoption of the minutes of the meeting and Decisions
- Announcements

m) Records and Documentation

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p) Amendment

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q) Effectiveness

These Rules of Procedure shall be effective for the first meeting of the working group.

5. REGIONAL DATA BASE WORKING GROUP

a) Objectives

Collect the information in each member country, according to the procedures established by the PTS and specific forms designed for that purpose. The PTS will be in charge of updating the Regional Data Base and publishing it in the NBI Power Trade Web Site.

Periodically discussing the improvement of the database and website structure to incorporate additional information or delete information that has proved to be of no use.

b) Activities

1. Agree on the information that will be collected based on the proposal of the current consultancy.
2. Adjust templates for collecting information if needed.
3. Agree on procedures to collect, submit and process information proposed by the current consultancy.
4. Gather the information in each country and submit it to the Power Trade Secretariat according to the agreed procedure.
5. Establish which of the database contents that will be public.
6. Establish the contents of the power trade website.
7. Define terms of reference of a consultancy to actually develop the database and website.
8. Be the counterpart of the consultancy.
9. Submit a final report on the construction and actual implementation of the database and website.

c) Products

1. Report indicating the variables that will initially comprise the database and the agreed procedures.
2. Regular reports of the data agreed to submit for the database.
3. Terms of reference of website/database consultancy.
4. Final report on consultancy's results.

d) Membership

The "REGIONAL DATA BASE" working group members will include:

- One senior technical specialist from each country that will attend the meetings scheduled in the working group work plan. S/he will represent the country in these

meetings and will be the Chair of the local team organised in the country to carry out the required tasks.

- A team of senior technical specialists as deemed necessary by the country which will be led by the professional attending the meetings. This team will perform the required tasks at country level.

- Any other lead specialist approved by the PTS

e) Observers and invited guests

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- Delegation of an alternate must be communicated to the PTC well ahead of the working group meeting.

- Continuity with and knowledge of the working group's activities is key to selecting suitable alternates.

g) Quorum

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h) Officers

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j) Venue

- Venue of the meetings can be any of the member countries.
- Venue of the meetings will be proposed by the PTS and approved by the countries in the meeting.
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k) Working Language

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l) Order of Business

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p) Amendment

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q) Effectiveness

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