

**NILE BASIN INITIATIVE
SHARED VISION PROGRAM
REGIONAL POWER TRADE PROJECT**

**Part II: Minutes of the First Meeting of the Nile
Basin Ministers Responsible for Electricity**

**Dar es Salaam, Tanzania
May 20–21, 2003**

March 2005



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Contents

1. Opening Ceremony.....	1
2. Session 1	3
3. Session 2	5
4. Session 3	7
5. Session 4	9
Annexes	
Annex 1: Welcome Statements	11
Annex 2: Participants	13
Annex 3: Agenda.....	23
Annex 4: Opening Remarks	27
Annex 5: Session 2 Presentations.....	37
Annex 6: Session 3 Presentations.....	47
Annex 7: Long-term Vision—Nile Basin Power Forum.....	53
Annex 8:Dar es Salaam Declaration on Regional Electric Power Trade.....	55

Acknowledgments

This report compiles the minutes of the High-Level Power Experts Meeting (Part I) and the First Meeting of the Nile Basin Ministers Responsible for Electricity (Part II) organized under the leadership of the Nile Basin Initiative Secretariat under the guidance and with the support of the Nile Basin Council of Ministers and Nile Technical Advisory Committee. The meetings took place in February and May 2003, respectively, in Dar Es Salaam, Tanzania.

The high-level power experts' meeting served to prepare the ministers meeting and develop a long-term vision for the Nile Basin Power Forum. The Nile Basin Ministers Responsible for Electricity unanimously adopted the Dar Es Salaam Declaration, which recognizes the significant socioeconomic and power-system benefits that can be realized from regional cooperation. The declaration also adopts the Long-Term Vision for the Nile Basin Power Forum and approves the Regional Power Trade Project Implementation Plan, including the establishment of the Nile Basin Power Forum. The power forum provides an important means for cooperating in the development of electric power resources in the Nile Basin.

The Nile Basin Initiative Secretariat team included former NBI Executive Secretary Meraji Msuya, Senior Program Officer Hamere Wondimu, Helen Bugaari, and Barbara Matovu.

The World Bank team included David Grey, Barbara Miller, Mangesh Hoskote, and Alexandra Planas. External consultants Moses Thompson, Anton Eberhard, and Mark Davis provided support by facilitating the discussions and providing background papers and presentations for the meetings and Andrea Heggen formatted the reports. Marjorie K. Araya from ESMAP coordinated the publication process.

The organizers also would like to express their gratitude to the government of Tanzania, especially the Ministry of Energy and Minerals, for hosting the two events. Financial support for the two meetings was provided by the Energy Sector Management Development Program (ESMAP) under the Nile Basin Initiative Regional Power Trade Project activity funded under ESMAP's UK trust fund.

Abbreviations and Acronyms

EEPCO	Ethiopian Electric Power Corporation
ENSAP	Eastern Nile Subsidiary Action Program .
ESMAP	Energy Sector Management Assistance Programme
ICCON	International Consortium for Cooperation on the Nile
IPP	Independent power producer
KPLC	Kenya Power and Lighting Company
MOU	Memorandum of understanding
NBI	Nile Basin Initiative
NBTF	Nile Basin Trust Fund
NEC	National Electric Power Corporation
NELSAP	Nile Equatorial Lakes Subsidiary Action Project
NEPAD	New Partnership for Africa's Development
Nile-COM	Nile Council of Ministers of Water Affairs
PEWGW	Power Experts Working Group
PIP	Project implementation plan
PMU	Project management unit
RPT	Regional Power Trade
SAP	Subsidiary Action Program
SAPP	Southern Africa Power Pool
SNEL	Société nationale d'électricité
SVP	Shared Vision Program
TANESCO	Tanzania Electric Supply Company Limited
UETCL	Uganda Electricity Transmission Company Ltd.

1

Opening Ceremony

1.1 The opening ceremony of the First Nile Basin Meeting of Ministers Responsible for Electricity was attended by the honorable ministers responsible for electricity of the Nile Basin countries; their technical experts, including permanent secretaries (or equivalent) from the respective ministries; chief executive officers (or equivalent) from the utilities; representatives of cooperating partner organizations; and other invited guests.

1.2 The chairman, Honorable Daniel N. Yona, minister of energy and minerals, Tanzania, welcomed the members, thanking them for turning up for this important meeting, and invited key speakers to make their remarks.

1.3 The meeting was addressed by the chairman of the Nile Basin Council of Ministers (Nile-COM), H. E. Shiferaw Jarso, minister of water resources, Ethiopia, who welcomed the participants to the ministerial meeting and thanked the Tanzania government for hosting the meeting, recognizing that Tanzania has played a significant role in the Nile Basin Initiative (NBI) process since its inception. He highlighted the main objective of the project, which is to create the institutional mechanism to develop electricity markets and promote power trade across and beyond our region, through the Nile Basin Power Forum.

1.4 Honorable Ms. Sigrid Romundset, ambassador, Royal Norwegian Embassy in Tanzania, welcomed the attainment of a Headquarters Agreement by the Nile Secretariat (Nile-SEC), pointing out it is now easy for donors to channel the funds through the Nile Basin Trust Fund (NBTF), administered by the World Bank. She pointed out that Norway welcomes the way the NBI and Power project has been able to work within the objectives of the New Partnership for Africa's Development (NEPAD). She reaffirmed the Norwegian government's commitment as was stated at the meeting of the International Consortium for Cooperation on the Nile (ICCON) in Geneva, and said they look forward to signing the Trust Fund.

1.5 Mr. David Grey, senior water adviser and Nile program manager, World Bank, on behalf of cooperating partners gave an address commending the countries for their commitment to the initiative.

2 Minutes of the First Meeting of the Nile Basin Ministers Responsible for Electricity Part II

1.6 The official opening address was delivered by the vice president of Tanzania, H. E. Dr. Ali Mohameid Shein. He expressed appreciation for the NBI achievements so far, and welcomed all members especially guests from outside Tanzania. He pointed out the important objectives of the meeting, emphasizing the need for economic development, which can be attained through regional power trade. He appreciated the fact that Tanzania has been given the honor to host the Power Project. He declared the meeting officially open.

1.7 Welcome statements are attached as annex 1.

2

Session 1

Participation

2.1 The meeting was attended by the honorable ministers of the NBI responsible for electricity from Burundi, Egypt, Eritrea,¹ Ethiopia, Rwanda, Sudan, Tanzania, and Uganda. The minister from the Democratic Republic of the Congo (DRC) was represented by the attaché of affairs from the DRC Embassy in Dar es Salaam. Power experts from the 10 countries were also present during the meeting. Representatives from cooperating partners and other invited guests attended the meeting. The Nile-SEC and Nile Team were also in attendance. The list of participants is attached as annex 2.

Selection of Rapporteur

2.2 The host country, Tanzania, was the chair. Ethiopia was elected as the rapporteur.

Adoption of the Meeting Agenda

2.3 The agenda was discussed and adopted without any amendments and is appended as annex 3.

Statements from Nile Basin Ministers Responsible For Electricity

2.4 The honorable ministers responsible for electricity delivered their statements in which they reaffirmed their commitment to the NBI. They expressed appreciation for the accomplishments of the NBI to date. They reaffirmed their commitment to the NBI process and encouraged power integration in the Nile Basin region, pointing out that this will encourage economic, technical, and environmental benefits. Opening remarks are appended as annex 4.

¹ Eritrea attended as an observer.

3

Session 2

International Rivers: Sharing the Benefits of Cooperation

3.1 Mr. David Grey, senior water adviser, and Nile program manager, World Bank, gave a presentation on International Rivers and the Benefits of Cooperation. The presentation provided an overview of Africa's complex and grave water challenges, identifying hydrological variability as an important factor hindering the region's economic growth and security. He highlighted the linkages between water and power in Africa and stressed the benefits of regional cooperation in addressing hydrological variability and watershed management, and power generation and trade. The presentation highlighted the relationship between regional integration through joint management of rivers, including storage and power, and regional security. He further elaborated on the multiple agendas, the different types of cooperation, and the challenges in sharing those benefits. Mr. Grey's conclusion was that investments in power trade can transform the Nile Basin countries' economies, but such transformation will need vision, innovation, and boldness.

NBI and SVP Overview

3.2 Mr. Meraji Msuya, executive director, NBI Secretariat, presented the Nile Basin Initiative and Shared Vision Program Overview, highlighting the process and progress to date.

Overview of Subsidiary Investment Programs

3.3 Mr. Antoine Sendama, Nile Equatorial Lakes Coordinating Unit (NEL-CU) coordinator, and Dr. Salaheldien Yousif, Eastern Nile Technical Region Office (ENTRO), presented an overview of Subsidiary Investment Programs – NELSAP and ENSAP, giving the progress of their respective power programs.

3.4 The presentations are appended as annex 5.

4

Session 3

Benefits of Power Trade and its Contribution in Regional Economic Development

4.1 Mr. Anton Eberhard, a consultant, delivered a presentation on benefits of power trade and its contribution in regional economic development. He talked about the experience of power trade in other regions including the Mekong Basin, the Common Baltic Electricity Market (CBEM), SIEPAC in Central America, and CIER in South America and further elaborated on the South African Power Pool (SAPP), because many similarities exist between the two subregions. The presentation pointed out potential benefits of power trade in the Nile Basin for the power sector and for the economies in general. The Nile Basin has huge potential for cooperative development of hydro resources and increased interconnection and trade that can bring important benefits for the economy including increased economic activity, social and developmental benefits, multipurpose and environmental benefits, and peace and regional security through economic integration.

Mediterranean Power Pool

4.2 Dr. Mohamed Awad, chairman of the Egyptian Electricity Holding Company, presented a paper on the Mediterranean Power Pool. Highlighting the fact that the pool was just a dream 10 years ago, he outlined the scope of two regional electricity interconnections, linking Egypt to Europe from the east and the west.

Overview of the Nile Basin Shared Vision Program Regional Power Trade Project and the Long-Term Vision for the Nile Basin Power Forum

4.3 Mr. Bashir Mrindoko, commissioner for energy and petroleum affairs, Ministry of Energy and Minerals, Tanzania, presented an overview of the project including its implementation arrangements, staffing of the project management unit, the Steering and Technical Committees, SVP coordination, and budget. Mr. Mrindoko also presented to the Nile Basin ministers the Long-Term Vision for the Nile Basin Power Forum developed by the high-level power experts during a meeting held in Dar es Salaam in February 2003. The vision was endorsed by the ministers.

8 Minutes of the First Meeting of the Nile Basin Ministers Responsible for Electricity Part II

4.4 The presentations are appended as annex 6 and the Long-Term Vision is included in annex 7.

5

Session 4

Dar es Salaam Declaration on Regional Power Trade

5.1 The Dar es Salaam Declaration was presented to the honorable ministers. The declaration recognizes the significant socioeconomic as well as power system benefits that can be realized from regional cooperation. It further recognizes the growing cooperation in the Nile Basin, particularly as achieved through the NBI. The declaration adopts the Long-Term Vision for the Nile Basin Power Forum and approves the Regional Power Trade Project Implementation Plan, including the establishment of the Nile Basin Power Forum. The Power Forum provides an important means for cooperating in the development of electric power resources in the Nile Basin. The Dar es Salaam Declaration on Regional Power Trade was unanimously adopted and signed by all the ministers.

5.2 The declaration is appended as annex 8.

Closing Ceremony

5.3 In closing remarks, the chairman thanked the members for their active participation at the historic meeting, the first of its kind, and expressed high hopes in the future opportunities from the Regional Power Trade Project.

Annex 1

Welcome Statements

Address by H. E. Shiferaw Jarso, Chairman of the Nile Council of Ministers and Minister of Water Resources, Ethiopia

H.E. Dr. Ali Mohammed Shein, vice president, United Republic of Tanzania, and guest of honor,

Honorable ministers responsible for electricity from the Nile Basin countries,

Ambassadors,

NBI cooperating partners,

Distinguished delegates, experts,

Ladies and gentlemen,

It is indeed my great pleasure and honor, on behalf of my member colleagues of the Nile Basin Council of Ministers, to welcome this first meeting of the Nile Basin Ministers responsible for electricity under the spirit of Nile Basin Initiative. The full attendance at this meeting signifies our countries' commitment to the NBI process and its important role in achieving sustainable socioeconomic development in our region. Let me also take this opportunity to thank the Government of Tanzania for hosting this meeting. And we thank you, guest of honor, for committing your valuable time to officiate this meeting—the first of its kind in the history of the Nile Basin.

Excellencies and colleagues,

The commitment and contribution of Tanzania in furthering the NBI process is well recognized. The NBI was launched here in Dar es Salaam. The Agreed Minutes, which established the NBI, were signed here, in this city, on February 22, 1999. Tanzania played a significant role in brokering the process of consultation and dialogue, which resulted in the formation of this unique regional initiative. The NBI is now recognized internationally, and its Secretariat, located in Entebbe, Uganda, enjoys full legal status.

Today, as host of this first meeting of the Nile Basin ministers responsible for electricity, Tanzania once again plays an important role in the history of the NBI.

Guest of honor and my fellow Nile Basin ministers,

The NBI is promoting cooperation within the Nile Basin in many different sectors. And I believe that it is in your sector of power that the potential exists to realize the first tangible—and perhaps greatest—benefits from regional cooperation.

Your technical experts have conceived and prepared the Power Trade Project of the NBI Shared Vision Program. A key objective of this project is to create the institutional mechanism—the Nile Basin Power Forum—to develop electricity markets and promote power trade across and beyond our region.

In parallel, through the NBI's investment programs at the subbasin level, your technical experts are exploring options and preparing investments in hydroelectric generation and transmission interconnection so vitally needed to serve the energy needs in our countries and support power trade.

Together, these parallel programs in regional, institutional building, and in infrastructure development will help to improve access to reliable and low-cost power in an environmentally sustainable manner. This, we know, is an essential element in reducing poverty in our region and achieving economic prosperity for our peoples.

It is at this meeting that we, the ministers of water affairs, hope that you, the ministers responsible for electricity, will take on this challenge of promoting power trade across the region and beyond, and of collaboratively pursuing power-related investments in the Nile Basin.

Our guest of honor,

The NBI provides a unique forum for the countries of the Nile to build a solid foundation of trust and confidence and to design and implement cooperative programs that realize tangible benefits in the Basin. For the first time in history, all of our countries have embarked on a remarkable journey together and on a path of our own making. Hardly five years in existence, already we see some significant changes. We have forged a fruitful partnership aimed at bringing prosperity, peace, and security to our basin and the region as a whole.

Fellow ministers of the Nile Basin, we thank you for your participation in this process to date and welcome your growing engagement in the NBI. We know that through sustained commitment, together we can indeed realize our shared vision:

“To achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources”

We must focus on achieving tangible results. Our shared vision must be translated into real benefits for all the peoples of our region and especially for the poor.

I thank you all for your attention.

Annex 2

Participants

Burundi	Burundi
Dr. Prof. André Nkundikije Ministre de l’Energie et des Mines BP 745 Bujumbura, Burundi Phone: 257 22 5909/ 225101 Fax: 257 22 3337	Mr. Nolasque Ndayihaye Director of Energy ad interim Ministry of Energy and Mines BP 745 Bujumbura, Burundi Tel: 257 22 3888/ 226579 Fax: 257 223337 dgee@cbinf.com
Burundi	Burundi
Mr. Désiré Florent Nzayanga Director General of Energy and Water Ministry of Energy and Mines BP 745 Bujumbura, Burundi Tel: 257 229 555 Fax: 257 229624 dgee@cbinf.com	Mr. SEJJI Daniel Directeur de l'Electricite REGIDESO BP 660 Bujumbura Tel: 257 24 3307 Fax: 257 22 216 Email: dsejji@yahoo.fr
Burundi	Democratic Republic of Congo
Mr. Philippe Niyongabo Director General of REGIDESO 3 Avenue de la science BP 660 Bujumbura, Burundi Tel: 257 22 2720/210553 Fax: 25722 6563 phniyongabo@yahoo.fr / dgregie@cbinf.com	Hon. George Buse Falay Ministre de l’Energie Boulevard de 30 Juin Immeuble REGIDESO Kinshasa/Gombe Phone: 243 813 330203

<p align="center">Democratic Republic of Congo</p> <p>Mr. Vika Di Panzu Adviser for International Relations, SNEL P.O. Box 500 Kinshasa, DRC Tel: 243 081700 5850 /089 13 027 Fax: 243 12 33735/33734 sneldg@ic.cd, vikadipanzu@yahoo.fr</p>	<p align="center">Democratic Republic of Congo</p> <p>Mr. Cifarha Male Andre Assistant to Deputy Chief Executive SNEL P.O. Box 500 Kinshasa, DRC Villa 557, Citemama Mobutu C/Mont - Ngafula Tel: 243 081700 55 10/089 13 027 Fax: 243 12 33735/33726/ 33734 maleif@yahoo.fr</p>
<p align="center">Democratic Republic of Congo</p> <p>Mr. Alphonse Muyumba Kalenge Chief Executive SNEL 2831 Av. De la Justice Kinshasa, DRC Tel: 243 817005421 Fax: 243 12 33735 almuyumba@yahoo.fr/sneldg@ic.cd</p>	<p align="center">Democratic Republic of Congo</p> <p>Mr. Etienne Tshibangu Director Attaché SNEL P.O. Box 500 Kinshasa, DRC Tel: 243 8189 13674 Fax: 243 12 33735 etshibangu@yahoo.fr</p>
<p align="center">Democratic Republic of Congo</p> <p>Mr. Cyrille Komanda Litata Secretary of the Minister of Energy Boulevard de 30 Juin Immeuble REGIDESO Kinshasa/Gombe Phone: 243 813 330203</p>	<p align="center">Egypt</p> <p>Dr. Hassan Ahmed Younes Minister of Electricity and Energy C/o P.O. Box Abbasia Tel: 202 2616317/ 7610573/761 0575 Fax: 7610573</p>
<p align="center">Egypt</p> <p>Dr. Mohamed M. Awad Chairman Egyptian Electricity Holding Company Abbassia Nasr-City, Cairo, Egypt Tel: 202 2616306 - 2616487 Fax: 202 2616512 – 26162239 P. Code: 11517 eea_awad@link.net</p>	<p align="center">Egypt</p> <p>Eng. Abdel Rahman Salah El-Din Under Secretary of State for Minister's Office Ministry of Electricity and Energy Abbassia, Extension of Ramsis St. Code No. 11517 Cairo, Egypt P.O. Box 222 Abbassia Tel: 202 4051162/ 2616514 / 2616317 Fax: 202 2616302 Telex: 92097 POWER UN</p>

Egypt	Egypt
<p>Eng. Abdel Rahim Ahmed Helmi Hamza Manager Network Studies, Egyptian Electricity Holding Company Extension of Ramsis St, Abbassia, Nasr- City, Cairo, Egypt Tel: 202 2616531/ 4012368 Fax: 202 4011630 P. Code:11517 Abd_rahim@yahoo.com</p>	<p>Dr. Eng. Fatma Ahmed Moustafa General Director for International Cooperation and Agreements Ministry of Electricity and Energy Abbassia, Extension of Ramsis St. Code No. 11517 Cairo, Egypt P.O. Box 222 Abbassia Tel: 202 2616571/ 2616514 / 2616317 Fax: 202 2616302 Telex: 92097 POWER UN intcoop@hotmail.com</p>
Ethiopia	Ethiopia
<p>Hon. Haile Assegede State Minister for Infrastructure C/o P.O. Box 23847-Code 1000 Addis Ababa, Ethiopia Tel: 251 1 457 7890 Fax: 251 1 461176 Ggbg1@telecom.net.et</p>	<p>H.E. Shiferaw Jarso Minister of Water Resources and Nile-COM Chairman Ethiopia</p>
Ethiopia	Ethiopia
<p>Mr. Teferra Beyene Project Manager MSHPSP Department Head Ministry of Water Resources P.O. Box 23847-Code 1000 Addis Ababa, Ethiopia Tel: 251 1 457 7890 Fax: 251 1 461176 Ggbg1@telecom.net.et</p>	<p>Mr. Mengesha Shiferaw Director, Civil Work Projects Administrative Department Ethiopia Electric Power Corporation P.O. Box 1233 Addis Ababa, Ethiopia Tel: 251 1 526 519/ 509940/ 154164 Fax: 251 1 514256 mengesha84@hotmail.com</p>
Ethiopia	Kenya
<p>Mr. Miheret Debebe General Manager Ethiopian Electric Power Corporation Degualle Square Addis Ababa, Ethiopia P.O. Box 1233 Tel: 251 1 56 0041 Fax: 251 1 552345 eelpa@telecom.net.et</p>	<p>Hon. Ochilo Ayako Minister for Energy P.O. Box 30582 Nairobi, Kenya Phone: 254 2 330048 Fax: 254 2 240910 ps@energymin.go.ke</p>

Kenya	Kenya
Mrs. Bernadette Nzioki Senior Deputy Secretary Ministry of Energy, Kenya P.O. Box 30582 Tel: 254 02 330048 Fax: 254 2 240910 ps@energymin.go.ke	Mr. Jasper Odour Managing Director Kenya Power & Lighting P.O. Box 30099 Nairobi Kenya Tel: 254 2 32014700 Fax: 254 2 3750181 joduor@kplc.co.ke
Kenya	Kenya
Mr. John Githinji Chief Engineer Ministry of Energy P.O. Box 30582, Tel: 254 2 330048 Fax: 254 2 240910 Nairobi, Kenya power@energymin.go.ke	Mr. Albert Mugo Power System Development Manager KPLC Nairobi, Kenya Tel: 254 2 3201 4306 Fax: 254 2 337351 amugo@kplc.co.ke
Kenya	Rwanda
Mrs. Wangari Githi Public Relations Officer Minister for Energy P.O. Box 30582 Nairobi, Kenya Tel: 254 2 341843 Fax: 254 2 240910 ps@energymin.go.ke	Hon. Sam Nkusi MP State Minister in charge of Energy and Communication Ministry of Infrastructure P.O. Box 24 Kigali, Rwanda Rwanda
Rwanda	Sudan
Mr. Aloys Makuza Kanamugire Director of Energy Ministry of Infrastructure P.O. Box 24 Kigali, Rwanda Tel: 250 08506664/250 583706 Fax: 250 583706 mkanamugire@yahoo.fr	Hon. Ali Tamim FARTAK Minister of Electricity Gamé Avenue Khartoum, Sudan Phone: 249 11 786550/ 78374 Fax: 249 11 778036

Sudan	Uganda
Mr. Amin Sabri Ah Sudan med Secretary General Ministry of Electricity Game Avenue P.O. Box 1380 Khartoum, Sudan Tel: 249 11 783074 Fax: 249 11778036 aminsabri@yahoo.com	Hon. Daudi Migereko State Minister for Energy P.O. Box 7270 Kampala, Uganda dmigereko@parliament.go.ug
Uganda	Uganda
Mr. Watuwa Bwobi Director for Energy and Mineral Development Ministry of Energy and Mineral Development P.O. Box 7270 Kampala, Uganda Tel: 256 41 232987 Fax: 256 41 234732 directoremd@utlonline.co.ug	Mr. Gerald Muganga Manager Engineering Services Uganda Electricity Transmission Co. Ltd. P.O. Box 7625 Kampala, Uganda Tel: 256 41 233433 Fax: 256 41 341789 muganga@uetcl.com
Uganda	Uganda
Mr. Erias Kiyemba Managing Director, Uganda Electricity Transmission Co. Ltd. Plot 29/33 P.O. Box 7625 Kampala, Uganda Tel: 256 (006) 41 233972/ 349 126 Fax: 256 41 341789 e.kiyemba@uetcl.com	Mr. Henry Bidasala-Igaga Principal Energy Officer Ministry of Energy & Mineral Development P.O. Box 7270 Kampala, Uganda Tel: 256 41 235889/257863 Fax: 256 41 349342 igaga@energy.go.ug or bidasala@hotmail.com
Tanzania	Tanzania
Hon. Daniel N'yona Minister of Energy and Minerals P.O. Box 2000 Dar es Salaam, Tanzania	Mshana Daniel E. P R Manager TANESCO P.O. Box 9024 Dar es Salaam, Tanzania Tel: 255 744 267046

Tanzania	Tanzania
Mr. Pheophilillo Bwakea Assistant Commissioner for Electricity Ministry of Energy and Minerals P.O. Box 2000 Dar es Salaam, Tanzania Tel: 255 22 2119159 Fax: 255 22 120799 bwakea@mem.go.tz	Mr. Bashiri Juma Mrindoko Commissioner for Energy & Petroleum Affairs Ministry of Energy and Minerals P.O. Box 2000 Dar es Salaam, Tanzania Tel: 255 222 139455 Fax: 255 022 2120799 Mrindoko@mem.go.tz
Tanzania	Tanzania
Mr. Rudy Huysen Managing Director TANESCO Umeme Park Ubungo P.O. Box 9024 Dar es Salaam, Tanzania Tel: 2451159 rhuyesen@cats-net.com	Mr. Mathew Mbwambo Executive Engineer (Sr.) Ministry of Energy & Minerals P.O. Box 2000 Dar es Salaam, Tanzania Tel: 211715618, 0741 303919 Fax: 2120799/2137169 mbwambo@hotmail.com
Tanzania	Tanzania
Mr. David Ngula Manager, Research & Development TANESCO P.O. Box 9024, Dar es Salaam, Tanzania Tel: 255 22 451131 /22 245 1210 Fax: 255 22 451206 depngula@cats-net.com , nguladep2002@yahoo.co.uk	Mr. Jimmy Adamson Deputy Manager Director TANESCO Umeme Park, Ubungo P.O. Box 9024 Dar es Salaam, Tanzania Tel: 022 245 1184/ 1984 Fax: 022 245 1184/ 1984 jadamson@cats-net.com
Tanzania	Eritrea
Mr. Butingo A.S. Luhumbika Director Ministry of Water and Livestock Development P.O. Box 412 Dodoma, Tanzania Tel: 255 744 494166 Fax: 255 22 2450005 Dwr-maji@intafrika.com	H.E. Tesfai Ghebreselassie Minister of Energy and Mines P.O. Box 5285 Jimma Senbetie St. No. 14 Asmara The State of Eritrea Tel: 291 1 116872 / 127944 Fax: 291 1 127662

Eritrea	
<p>Dr. Semere Habtezion Director Department of Energy Ministry of Energy and Mines P.O. Box 5285 or 5716 Jimma Senbetie St. No. 14 Asmara The State of Eritrea Tel: 291 1 127944 Fax: 291 1 127652 semereabh@yahoo.com</p>	
Nile Equatorial Lakes Subsidiary Action Program	Eastern Nile Subsidiary Action Program
<p>Mr. Antoine Sendama NEL CU Coordinator Nile Equatorial Lakes Subsidiary Action Program P.O. Box 192 Entebbe, Uganda Tel: 256 41 320208 / 321424 Fax: 256 41 320971</p>	<p>Dr. Salaheldien Yousif Eastern Nile Technical Regional Office, ENTRO Tel. +251 (1) 461130 +251 (1) 459407 Cell +251 (9) 246195 Fax: +251 (1) 459407 entro@telecom.net.et P.O. Box 27173 code 1000 Addis Ababa, Ethiopia</p>
Nile Basin Discourse	NBI Secretariat
<p>Mr. Jean Bigagaza Facilitator Nile Basin Discourse Plot 56 Circular Road Entebbe Tel: 256 41 322433 / 322 432 Cell: 256 77 344627 facilitator@utlonline.co.ug</p>	<p>Mr. Meraji Msuya Executive Director Nile Secretariat P.O. Box 192 Entebbe, Uganda Tel: 256 41 321424 Fax: 256 41 320971 mmsuya@nilesec.org</p>
NBI Secretariat	NBI Secretariat
<p>Ms. Helen Bugaari Program Officer Nile Secretariat P.O. Box 192 Entebbe, Uganda Tel: 256 41 320183/ 321424 Fax: 256 41 320183 hbugaari@nilesec.org</p>	<p>Ms. Hamere Wondimu Senior Program Officer Nile Secretariat P.O. Box 192, Entebbe, Uganda Tel: 256 41 321424\ hwondimu@nilesec.com</p>

<p align="center">NBI Secretariat</p> <p>Ms. Barbara Matovu PSEC(ED) Nile Secretariat P.O. Box 192 Entebbe, Uganda Tel: 256 41 321329/ 321424 Fax: 256 41 320971 nbisec@nilesec.org</p>	<p align="center">Donors and Partners</p> <p>Babu Ram, Ph.D. Principal Power Engineer African Development Bank TRA, TUNIS, TUNISIA Tel: 216 71 333 511 Fax: 216 71 351 933</p>
<p align="center">Donors and Partners</p> <p>Mr. Ahmed Ounalli ADB Consultant on Energy African Development Bank 14 rue IBN Sina 2010 Manouba Centre Tunisia Tel: 216 71 800 960 Ounalli_tn@yahoo.fr</p>	<p align="center">Donors and Partners</p> <p>Anders Hagwall Senior Regional Advisor/Counsellor Swedish Embassy P.O. Box 9274 Dar es Salaam Tel: 255 22 2111235 Fax: 255 22 2113420 Anders.hagwall@sida.se</p>
<p align="center">Donors and Partners</p> <p>Ms. Irene Hoel Adviser, Section for N. Africa & the Middle East Norwegian Agency for Development Cooperation (NORAD) Ruselokkvn 26 P.B. 8034 Dep N-0030 Oslo, Norway Tel: +47 22 24 20 30/02 86 F: +47 22 24 027622 24 20 31 e-mail: irene.hoel@norad.no</p>	<p align="center">Donors and Partners</p> <p>Ms. Sigrid Romundset, Ambassador Royal Norwegian Embassy Tanzania Mirambo Street Tel: 255 22 2113366</p>
<p align="center">Donors and Partners</p> <p>Mr. Jan Moen Norway</p>	<p align="center">Donors and Partners</p> <p>Egil Skofteland Adviser NVE Middelthunsgt 29, Oslo Norway Tel: 47 22 959595</p>

Donors and Partners	Donors and Partners
<p>Mark Davis Director ECON P.O. Box 5 or 0051 Oslo, Norway Tel: 47 90147034 Fax: 47 22 420040 Mark.davis@econ.no</p>	<p>Mr. Leif Sauvik Norway</p>
Donors and Partners	Donors and Partners
<p>David Grey Sr. Advisor and Nile Team Leader The World Bank 1818 H. St, NW Washington, DC 20433 USA. Tel: 1-202-473 4125 Fax: 1-202-473 8301 dgrey@worldbank.org</p>	<p>Fadi Chidiac Consultant Acres International P.O. Box 1000 4342 Queen Street Niagra Falls, Canada Tel: 1 905 374 5200 / 5218 Fax: 905 374 11 57 fchidiac@acres.com</p>
Donors and Partners	Donors and Partners
<p>S. Thomas Lavender Consultant Acres International P.O. Box 1000 4342 Queen Street Niagara Falls, Canada Tel: 1 905 374 5200 Fax: 905 374 11 57 tlavender@acres.com</p>	<p>Barbara Miller SVP Coordinator, AFTNL World Bank Nile Team 1818 H Street, NW J-11 Washington DC Tel: 1 202 473 2451 bmiller@worldbank.org</p>
Donors and Partners	Donors and Partners
<p>Jacob Granit NELSAP Coordinator, AFTNL The World Bank 1818 H St, NW Washington DC 20433 USA Tel: 1 202 473 3658 Fax: 1-202-473 8301 jgranit@worldbank.org</p>	<p>Anton Eberhard Professor University of Capetown P/Bag Rondebosch 7701 Cape Town South Africa Tel: 27 4061922 Fax: 27 4061412 eberhard@gsb.uct.ac.za</p>

Donors and Partners	Donors and Partners
Alexandra Planas World Bank Nile Team, AFTEG 1818 H Street, NW J-9-900 Washington DC Tel: 1 202 473 6772 aplanas@worldbank.org	Allison Berland World Bank Nile Team, AFTNL 1818 H Street, NW J11-100 2800 Quebec Street NW # 1027 Washington DC Tel: 1 202 473 4442 aberland@worldbank.org
Donors and Partners	Donors and Partners
Mangesh Hoskote Sr. Power Specialist The World Bank 50 Mirambo Street, Dar es Salaam Tel: 255 22 2114575 Fax: 255 22 2113039 mhoskote@worldbank.org	Isaak Masaala Consultant P.O. Box 956 Dar es Salaam, Tanzania Tel: 255 741 338 749 ilmasalla@hotmail.com

Annex 3

Agenda

Opening Ceremony

9:00–10:00 am

Chairman: Honorable Daniel N. Yona, minister, Ministry of Energy and Minerals, Tanzania

Address by the Chairman, Nile Basin Council of Ministers
H.E. Shiferaw Jarso, minister of water resources, Ethiopia

Address from NBI Development Partners
Honorable Ms. Sigrid Romundset, ambassador, Royal Norwegian Embassy in Tanzania

Address from the World Bank
Mr. David Grey, senior water adviser and Nile program manager, World Bank

Official Opening Address

10:00–10:45 am

Coffee Break

Session 1

10:45 am–12:30 pm

Selection of Rapporteur

Objectives and Agenda of the Meeting

Statements from Nile Basin States Ministers Responsible for Electricity

Burundi	Rwanda
Democratic Republic of Congo	Kenya
Egypt	Sudan
Ethiopia	Uganda
	Eritrea

12:30–2:00 pm *Lunch*

Session 2

2:00–3: 30 pm

International Rivers: Sharing the Benefits of Cooperation

Sharing the Benefits of Cooperation

Mr. David Grey, senior water adviser, and Nile program manager, World Bank

Nile Basin Initiative and Shared Vision Program, An Overview

Mr. Meraji Msuya, executive director, Nile Basin Initiative Secretariat

Overview of Subsidiary Investment Programs – ENSAP and NELSAP

Mr. Antoine Sendama, NEL-CU coordinator
Dr. Salaheldien Yousif, ENTRO

Discussion

3:30–4:00 pm Coffee Break

Session 3

4:00–5:30 pm

Regional Power Trade

Benefits of Power Trade and its Contribution in Regional Economic Development

Prof. Anton Eberhard, board member of National Electricity Regulator and Graduate School of Business, University of Cape Town, South Africa

Mediterranean Power Pool

Dr. Mohamed Awad, chairman, Egyptian Electricity Holding Company

Overview Regional Power Trade Project

Mr. Bashir Mrindoko, commissioner for energy and petroleum affairs, Ministry of Energy & Minerals, Tanzania

Presentation of Long -term Vision for Power Forum

Mr. Patrick Rutabanzibwa, permanent secretary, Ministry of Energy and Minerals

Session 4

5:30–6:00 pm

Dar es Salaam Declaration

Rapporteur

AOB

Closing Ceremony

8:00 pm Formal Dinner with Address by an Invited Speaker

Annex 4

Opening Remarks

Remarks by H.E. Minister Dr. Hassan A. Younes, Ministry of Electricity and Energy, Arab Republic of Egypt

His Excellency Minister Daniel Yona,

Excellencies, ministers, and

Distinguished guests,

Ladies and gentlemen,

On behalf of all of you, the Egyptian delegation and myself, please let me extend our sincere appreciation and thanks to H.E. Minister Daniel Yona for organizing and sponsoring this event. Also, thanks are due for the hospitality we are receiving during the event.

Also, please allow me, on behalf of all of you, to extend our appreciation and thanks to the financing institutions who support this activity.

Ladies & gentlemen,

Today's event is an important step toward the enhancement of our continuous effort to be involved in the improvement of the social and economic development efforts for Africa in general and specifically for the Nile Basin countries.

Also, today's event is a continuation of our individual countries' activities in seeking solutions to the energy needs of our region.

We all realize our shared responsibility toward our common vision of the Nile Basin Initiative to achieve sustainable socioeconomic developments through utilization of, and benefit from, the common Nile Basin natural resources.

Within the framework of the Nile Basin Initiative, and as Nile riparian countries, Egypt considers the Regional Power Trade Project a real opportunity for establishing the institutional means to coordinate the development of regional power markets among the Nile Basin countries. Power trading through interconnected power grids will certainly enhance the development of the Nile riparian countries in a cooperative manner, sharing substantial socioeconomic benefits, and promotion of regional peace and security.

We believe that particularly in the field of energy, international and regional cooperation could lead to common understanding and great improvement in our development plans for the region countries.

Cooperation in the field of energy is the sole motivation for such positive impacts which enhance the relationship among the region countries.

The region is endowed with immense natural and energy resources that include oil, natural gas, and hydro.

The ultimate goals to be gained from the development of these resources and mutual cooperation to secure constant supplies of energy and transferring its services to its customers, in an easy, flexible and neat way could be accomplished.

The Egyptian experience with regional electrical interconnection provides a success story for the potential technical, policy, institutional, commercial, and environmental gains to the power sector and wider economy of the interconnected countries.

As you all know, Arab countries' interconnection has started between the North African countries a while ago, and only lately in 1998 on the Arab eastern countries by the Egypt-Jordan link, which was followed in 2001 by the Jordan-Syria interconnection, and is currently in the process to include six countries: Egypt, Jordan, Lebanon, Syria, Iraq and Turkey.

On the African side, a 220-kV link with Libya was completed in 1998, and Libya is expected to be connected to Tunisia later this year. Also, on the eastern side of Egypt, Lebanon and Syria will be connected this year. This extends the North Africa power grid, which covers Egypt, Libya, Tunisia, Algeria, and Morocco, to Europe through the existing interconnection between Morocco and Spain. This will form the first leg of the Africa-Europe link, which is projected to be upgraded to 500 and 400kV.

It is planned that south and east Mediterranean countries extending from Morocco to Syria will be interconnected to the northern Mediterranean countries through a Syria-Turkey AC transmission line and a Morocco-Spain AC submarine cable. This will create the Mediterranean power pool interconnection and enhance regional power trade in the Mediterranean Basin.

In fact, despite technoeconomic limitations and some electrical, geographical, and political constraints, the implementation of such interconnections among the region countries will entail economic, technical, and environmental benefits.

The main economic benefits are the direct savings resulting from postponing the construction of new power plants or extensions of established plants, and the decrease of the reserve margin for every individual system without affecting the reliability or availability of power supply, as well as savings from the reduction of operation and maintenance costs.

Interconnected systems with different daily or seasonal demand profiles can save capacity. Differences in production cost can be of great benefit for the interconnected systems.

The technical benefits of electrical interconnections are mainly related to the increase of the system availability and reliability as well as the increase of dynamic stability of the system.

Several environmental benefits are also obtained from electrical interconnections, such as better usage of primary energy resources, thus reducing polluting emissions and greenhouse gases.

Ladies and gentlemen,

These benefits certainly call for the implementation of full interregional electric interconnection within the entire Nile Basin countries and then the entire continent of Africa.

During the late 1980s of the last century, a feasibility study was undertaken on utilizing the considerable hydro resources available in Democratic Republic of Congo, to generate electricity to satisfy regional demand for electricity.

This will play a vital role in the economic growth and development of the region countries by providing reliable and efficient electric power to commercial, industrial, agricultural, and residential consumers.

The excess of such electrical energy may be exported to Europe through grid interconnection with Egypt and North African countries. The revenues from this excess energy export will support the infrastructure projects and will enhance the social economic impacts of the same.

The Nile Basin Initiative will provide the approach and will introduce the prerequisite ingredients for such important interconnection project(s), as the regional power trade project is intended to develop regional plans for expanding generation and transmission.

The implementation of similar interconnections among the Nile riparian countries will allow the joint utilization of the resources in a coordinated hydrothermal economic mix. It will be a multipurpose interconnection, transmitting bulk hydroelectric power to the load centers, allowing economic interchange of energy between regions and between countries. It will make available clean, low-cost, hydroelectric energy to the consumers and provide the means of economic growth and development of the region countries.

Revenues from exporting the excess electric energy to Europe would encourage foreign investors to finance such power projects in Africa, and will ensure the payback of the investments. These additional revenues will support the required development of the infrastructure of the region.

It is imperative that the formed specialized committees of this gathering consider the regional concept of interconnection activities and propose the recommendations for the implementation process for such important projects.

Within this context, Egypt is willing to provide support, particularly in the field of training, covering all aspects and tools related to building and operating all different types of power generation facilities particularly for hydropower projects where Egypt has already established a training center in Aswan. It would be to the advantage of the region countries to take benefit of it for training our different aspects of O&M hydro plants. Other established training centers in Egypt would be available to provide the training in power transmission systems and power generating facilities.

Ladies and gentlemen,

It seems imperative that the outcome recommendations of the specialized committees of this meeting focus on specific tasks regarding regional power trading, potential generation, and interconnection that should be implemented within a time frame to be achieved before our upcoming meeting.

If we manage to meet the challenge facing all of us, and obtain more balanced regional energy cooperation, then we shall be well on our way to tackling the other crucial issues of the Nile Basin region, such as alleviating widespread poverty and providing a cleaner, healthier world for future generations.

It is our hope that this meeting provides significant opportunities for participants to interact and discuss key country-specific and regional issues.

Thank you very much, and I wish that the outcome of our gathering will lead to a new horizon of cooperation and commitment toward the efficient use of clean and affordable energy.

Statement of H.E. Haile Assegide, minister for Infrastructure of Ethiopia

Honorable Dr. Ali Mohamed Shein, vice president of the United Republic of Tanzania;

Excellencies, ministers responsible for electricity;

Dear colleagues;

Ladies and gentlemen;

Ambassadors of our development partners;

Representatives of the African Development Bank and finance institutions present in the meeting,

On behalf of the Government of the Federal Democratic Republic of Ethiopia and myself I would like to thank the Government of Tanzania for extending unreserved hospitality to us.

Your excellence Mr. Chairman,

Dear colleagues,

After the inception of the NBI (Nile Basin Initiative) under the Shared Vision, which is “to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources,” the cooperation of the Nile Basin countries has today reached a remarkable stage.

Among the various areas in which cooperation is taking place is the Nile Basin Power Trade Projects whose fate will start to be shaped through the declaration we will pass at the end of this meeting.

It is evident that power trade is taking place, within the continent among the southern African and west African countries, between Egypt and Libya, and between Uganda and Kenya to name a few. The scope of the presently outlined project, however, is much wider than any one of the above mentioned. The fact that the cooperation in the preparation of the project has thus far been successful clearly shows that the tasks ahead will also be promising.

The 10 nations that share the Nile waters can benefit from power trade due to the availability of large untapped hydropower potential on the one hand and the existence of a large need for power on the other end. The development of regional power markets among the Nile Basin countries would allow exploring possibilities of optimized resource utilization.

The hydropower potential of the Basin countries is enormous, DRC (Democratic Republic Congo) having the largest, followed by Ethiopia.

As has been clearly indicated in the project document for “Nile Basin Regional Power Trade,” the benefits that can be drawn from power trade are the securing of

- Reduced operation costs due to economic power exchange

- Regionally selected least-cost project as opposed to national ones
- Common reduced reserve requirement
- Coincident peak load instead of average load.

In Ethiopia we are working toward constructing hydropower plants, which will be commissioned during the coming few years. It is my firm belief that these plants at their initial years of operation can contribute toward the provision of energy in Ethiopia and extra capacity to the power trade.

As the basin power trade project matures and many more tie lines are realized in the future, more and more hydropower plans can be commissioned in Ethiopia and the cooperating countries.

Your Excellency Mr. Chairman,

Dear colleagues;

I would like to mention that the transmission line project between Ethiopia and Sudan as part of the Subsidiary Action Program is being carried out. I sincerely hope that the Nile Basin Power Trade Project will soon realize similar tie lines among the 10 basin countries.

Finally I would like to reaffirm the commitment of the Government of Ethiopia toward the success of the project. Finally I would like to thank all our development partners who have made this meeting successful and support our future development efforts.

I wish success to the present meeting.

Thanking you.

Statement of H.E. Tesfai Ghebreselassie, Minister of Energy and Mines of Eritrea

Mr. Chairman, Honorable Daniel N. Yona;

Honorable ministers;

Representatives of development partners;

Ladies & gentlemen,

At the outset, on behalf of the Eritrea delegation and myself, I would like to take this opportunity to join my predecessor speakers, the honorable ministers to thank His Excellency Minister Daniel Yona and the Government of the United Republic of Tanzania for hosting this important meeting as well as for their warm and cordial hospitality.

So far, Eritrea maintains an observer status in the NBI. This being the case, let me assure your excellency that my country fully recognizes the importance of and supports the cherished objectives spelled out in the Shared Vision Programs of the NBI. To repeat the well-established fact of the reality in our region, many of our countries are facing considerable power shortages. In Eritrea, as in many other countries, power shortage and its high price constitute one of the major challenges of development. Our success in combating poverty and underdevelopment will, among other things, depend on how soon and how effectively we solve the existing power-related problems.

In this regard, my country, Eritrea, cannot agree more than on the need for a regional cooperative approach as formulated in the Regional Power Trade Program documents.

This could be one of the effective ways to tackle the power problems in our countries and to ensure cooperation and stability in our region.

For understandable reason, Eritrea's power-related data has not been incorporated in the mentioned documents. I would like to confirm that the missing data along with relevant information on what we have been doing to reform the power sector and the efforts we have been exerting on oil and gas exploration as well as studies on the potentials of renewable energies will soon be provided to the Secretariat.

In conclusion, I would like to thank all those who have contributed in whatever form to the formulation of the Regional Power Trade Visionary Program and the holding of this important meeting. It is my country's sincere desire and wish that the initiative becomes a great success to benefit all peoples of the basin.

Thank you for your attention.

Statement of Hon Daudi Migereko, Minister of State for Energy, Uganda

Mr. Chairman, the minister of energy minerals of the United Republic of Tanzania, Honorable Daniel Yona;

The chairman, Nile Council of Ministers;

Colleagues, honorable ministers from the Nile riparian countries;

Your excellencies;

Our development partners;

Distinguished participants;

Ladies and gentlemen,

It gives me great pleasure and honor to address you on this historical occasion when we witness the birth of a Regional Power Trade Forum. We commend the Nile Basin Initiative Secretariat, which we are honored to house in Uganda, for your efforts and this initiative. We also commend the Tanzanian government for her traditional warm hospitality.

Uganda is a country with unique characteristics. The entire territory of Uganda lies within the Nile River catchment area. Uganda is both an upper riparian and a lower riparian country. Uganda also plays host to a very big chunk of the biggest reservoir, Lake Victoria, from where the White Nile begins its long journey.

These unique features have taught us lessons, which have been our guiding pillars in planning national development.

Some of the main lessons learned are:

- That the Nile is the source of livelihood for the entire country
- That the Nile is also fed from some resources outside Uganda
- That the Nile is also a source of livelihood for our brothers and sisters outside Uganda.

Such lessons have influenced the formation of government policies. Government policy therefore aims at the following:

- Achieving sustainable utilization and management of the Nile resource
- Sharing the benefits from the Nile River with other riparian states where we have a comparative advantage
- Taking into consideration the legitimate interest of other riparian states in the Nile Basin.

With this background the Government of Uganda initiated and recently commissioned a comprehensive study on the Lake Victoria waters. The result of the Lake Victoria

Management Study will lead to better understanding and management of the Nile Basin resource to the benefit of many if not all the riparian states.

In the spirit of information sharing and taking other riparian interests on board, we have maintained the culture of notifying all riparian partners of any planned developments on the common Nile resource and seeking their opinion.

Whereas Uganda has a long-standing history of transboundary power trade with her neighbors dating as far back as half a century, this has been on bilateral basis. And except in the case of Kenya, the other transactions are not based on an interconnected grid system but supply of isolated cross-boarder territories, i.e., with Tanzania and Rwanda.

While the main objective of supplying power to those areas is achieved, the trading partners miss the other benefits that would accrue from an interconnected system. We have therefore been engaged in bilateral negotiations with most of our neighbors with a view to sourcing for funds for grid extension and strengthening. We shall need also to pursue the funding of generation capacity development seriously, in light of reduced appetite for investment in big hydro projects by Western energy companies. This forum should provide the solution to this steadily emerging reality of scarce funding from outside Africa. Short of this we shall remain the least electrified and shall not meet the millennium goals as agreed at the WSSD in Johannesburg.

The need for regional power trade has been high on Uganda's agenda. We have spared no efforts at every opportunity to raise and market this idea. The East African Community is helping us come up with something concrete. The sister member countries have embarked on the East African Power Master Plan Study. It is Uganda's hope and belief that the result of that study will be a useful input for planning programs under the Nile Basin Initiative Regional Power Trade project. The Regional Power Trade project is also a big step in the right direction toward the achievement of the NEPAD objectives on energy.

Mr. Chairman, it is heartening to observe that we have all heartily embraced the initiative for Regional Power Trade as a means of accessing electricity for our people and investment. This pledged commitment and support should lead to success. It is my sincere hope, however, that this initiative will generate not only well-written reports but also attract funding in addition to well-constructed physical infrastructure development, connecting and supplying quality, reliable, and clean power to the masses of our region. We have talked for a long time; it is now time to act to cease being the laughingstock of the world.

I thank you.

FOR GOD AND MY COUNTRY

Annex 5

Session 2 Presentations

1st Meeting of the
Nile Basin Ministers
Responsible for Electricity

Water and Power: Sharing the Benefits of Cooperation

David Grey
The World Bank
May 20–21, 2003
Dar es Salaam, Tanzania

An overview

- Africa's water challenge
 - An historical legacy of international rivers
 - A natural legacy of hydrological variability
- Africa's power challenge: the links
- The benefits of cooperation, & sharing them

Africa's water challenge is grave & complex....

- An historic legacy: international waters
- A natural legacy: climate variability

Africa's historical legacy: numerous international rivers

- 60+ international rivers
- Many countries per basin
- Many basins per country
- Tensions in all river basins (+/-)
- International relations challenge
- Cooperation: slow, costly, complex



International rivers: complex & political systems

- Entwined with cultures, complex, serious, affairs of states, sovereignty-related
- Management of rivers is political; management of international rivers is very political ...
- Rivals... dwellers on opposite banks of a river
- The Chinese got it right long ago:



Water wars or water for peace?



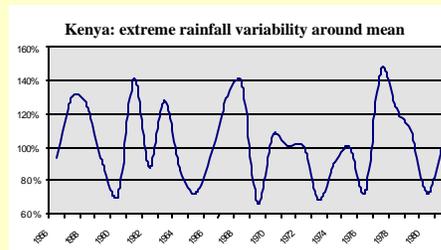
- e.g., the New Geography of Conflict
 "Possible flashpoint for resource conflict"
- Jordan
 - Nile
 - Tigris – Euphrates
 - Indus
 - Mountain Aquifer -W. Bank/Israel'
- OR: sharing the costs and benefits of cooperation..

Africa's natural legacy: hydrological variability

Extreme climate variability & associated landscape vulnerability mean very high costs to African economies; major investments are needed in water security...

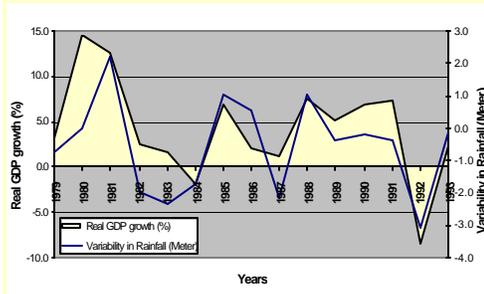


Kenya: very high hydrological variability

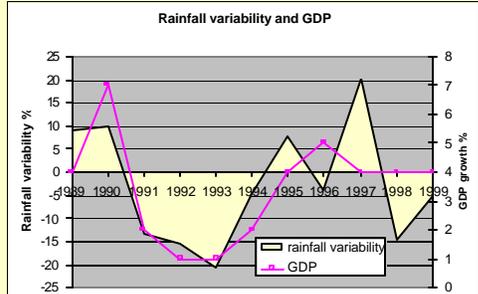


Rainfall affects growth...

Correlation between GDP and rainfall in Zimbabwe 1979-1993



Tanzania rainfall variability and GDP 1989-2000

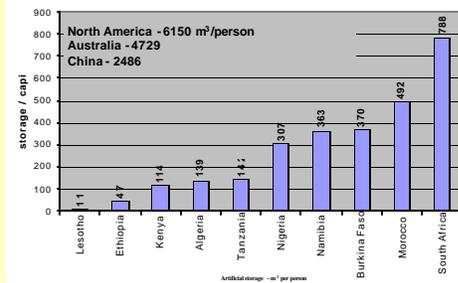


Economic impacts of extreme variability Kenya: 1997-98 flood & 1998-2000 drought

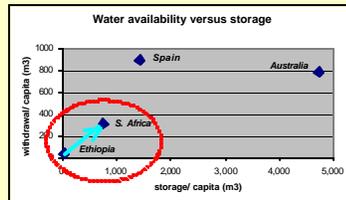
1097-02/98 flood	infrastructure damage		\$ 2.39 b
1098-05/00 drought	crop loss	\$ 0.24 b	
	livestock loss	\$ 0.14 b	
	reduc. HP production	\$ 0.64 b	
	reduc. industr. production	\$ 1.39 b	
	total		\$ 2.41 b
1097-05/00	cost of climate variability		\$ 4.8 b
	approx GDP	(\$9b/yr)	\$ 22 b
variability as GDP %		(48%)	22%

Direct recurring annual cost: catchment degradation/
deteriorating water quality \$120m/a

Storage is the key to managing variability Africa's limited water storage & the poverty trap

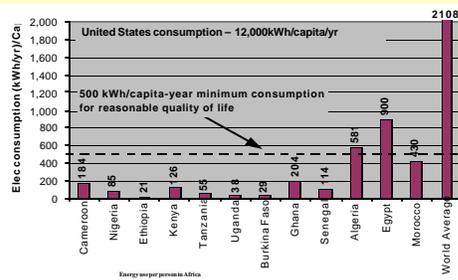


Storage per capita and "water security"

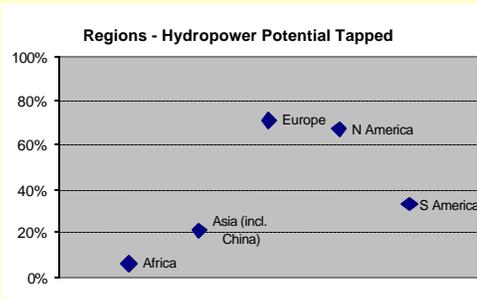


- Ethiopia needs 40km³ storage, c. US \$ 32 b (at \$ 0.8 / m³) = **5 X GDP**
- Assume: stable population, current storage 43 m³/cap (~Ethiopia), goal of 746 m³/cap in 20 yrs (~S. Africa; only 12% of USA...)
- % GDP investment: Australia 0.1%, South Africa 0.6%, Ethiopia 25%

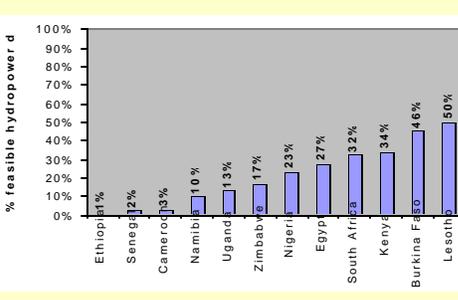
Africa's electricity use per person



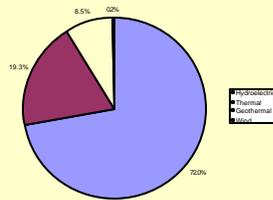
Hydropower potential tapped



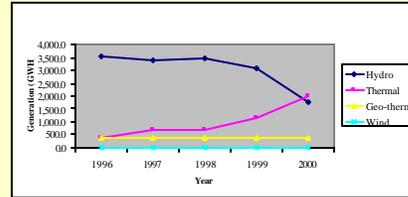
Africa's economically feasible HP developed



**BUT heavy dependence on hydropower ...
Kenya**



...can lead to vulnerability to hydrological variability



**Addressing the water legacies:
toward regional integration**

- **Hydrological variability:** manage through storage & mobility/diversity of production (incl. power) & trade → **regional integration**
- **International waters:** enhance regional security through joint management of rivers (incl. storage & power) → **regional integration**

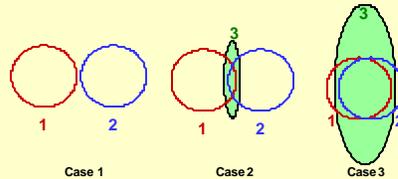
International waters: sharing the benefits of cooperation

1. Why cooperate?
2. The benefits of cooperation
3. Types of cooperation
4. Sharing benefits

Why cooperate? Multiple agendas

- All sovereign states will have national agendas: obvious, rational, legitimate
- In a two-country river basin there will be two national agendas, & potentially a 3rd cooperative agenda
- National agendas can converge toward a cooperative agenda, still remaining preferred agenda of each nation
- ...when there is benefit in doing so, & when benefits outweigh costs for each nation

Why cooperate? Converging cooperative agendas



...all cases can be rational. The choice among them will depend upon their relative benefits.

Benefits: the ecological river

	The Challenges	The Opportunities
Type 1: Increasing Benefits <i>To the river</i>	Limited water resource management; degraded watersheds, wetlands, biodiversity, & water quality.	Improved water quality, riverflow characteristics, soil conservation, biodiversity

- Cornerstone of river basin management
 - But many tradeoffs (pristine vs. engineered)
 - Unthreatening start for international cooperation
- Many recent examples
 - GEF: Baltic & Red Seas; Danube
 - The Rhine – “Salmon 2000”
- Watersheds & floodplains: the southern Africa case



Benefits: the economic river

	The Challenges	The Opportunities
Type 2: Increasing Benefits <i>From the river</i>	Suboptimal water resources development	Improved hydropower & agricultural production, flood-drought management, environmental conservation & water quality

- Optimal river development at basin scale
 - Again difficult tradeoffs – best at basin scale
 - NOT zero sum; increasing water availability
- Focus on benefits (\$), not water (m³)
- Many examples (with tradeoffs!)
 - The Senegal Basin: co-owned **power assets**; Lesotho Highlands: royalties to Lesotho (5% of GDP); **SA Power Pool**
- Challenge: sharing benefits & “fairness”



Benefits: the political river

	The Challenges	The Opportunities
Type 3: Reducing Costs <i>Because of the river</i>	Tense (+/-) regional relations & political economy impacts	Policy shift to cooperation & development, from dispute; from food & power self-sufficiency to security; reduced conflict risk & military expenditure (+/-)

- Always some tensions in all international rivers (but +/-)
 - Control: sovereignty, strategic necessity, national pride
 - Nothing flows: fragmented markets, infrastructure, labor flows
 - Self-sufficiency, not security – e.g., power
- Extreme cases: military preparedness
- Shared water one contributory factor in relations between states (cannot “unbundle”):
 - Water can contribute to dispute, even conflict
 - Water can be catalyst for cooperation & integration

Benefits: the catalytic river

	The Challenges	The Opportunities
Type 4: Increasing Benefits <i>Beyond the river</i>	Regional fragmentation	Integration of regional infrastructure, markets & trade

- Cooperation → political processes enabling other cross-border cooperation beyond the river
- Directly: through forward linkages:
 - Agricultural surpluses → growth in agribusiness & trade
 - **HP generation/trade** → expanded/profitable industry
- Indirectly: diminished tensions may enable greater economic integration
 - Increasing flows in unrelated sectors
 - The Mekong **power** case

Benefits of international waters cooperation

	The Challenges	The Opportunities
Type 1: Increasing Benefits <i>To the river</i>	Limited water resource management; degraded watersheds, wetlands, biodiversity, & water quality.	Improved water quality, riverflow characteristics, soil conservation, biodiversity
Type 2: Increasing Benefits <i>From the river</i>	Suboptimal water resources development	Improved hydropower & agricultural production, flood-drought management, environmental conservation & water quality
Type 3: Reducing Costs <i>Because of the river</i>	Tense (+/-) regional relations & political economy impacts	Policy shift to cooperation & development, from dispute; from food & power self-sufficiency to security; reduced conflict risk & military expenditure (+/-)
Type 4: Increasing Benefits <i>Beyond the river</i>	Regional fragmentation	Integration of regional infrastructure, markets & trade

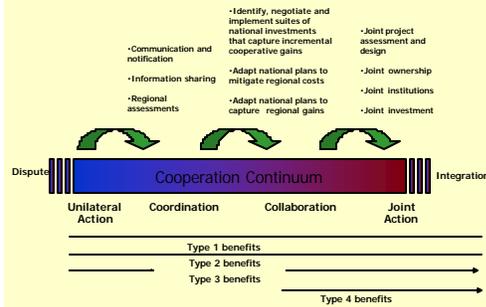
**The cooperative river:
the dynamics of multitype benefits**

- In all basins,
 - All types of benefits from cooperation
 - & noncooperation has costs due to opportunities foregone
- BUT scale & relative importance unique to each basin
 - As transactions costs high, benefits may be too small to justify cooperation in some cases
 - In others, may be necessary condition for stable relations & trade, thus greatest benefits from apparently unrelated development
 - The case of the Nile Basin Initiative: all four types of benefit

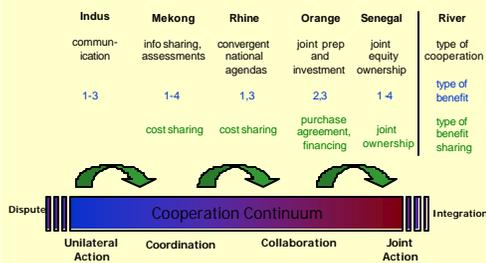
Types of cooperation

different types of cooperation have different costs and benefits...

Types of cooperation – a cooperation continuum



Types of cooperation – some examples



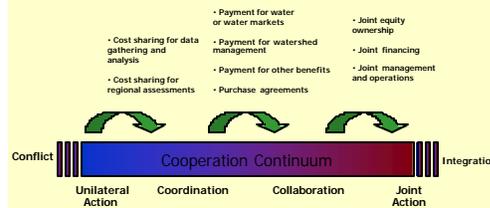
Sharing benefits: challenges

- Optimal river development may give unacceptable distribution of benefits
- A mechanism for redistribution & compensation
- 'Fairness' – subjective & situation specific
- Potential benefits to be shared
 - Water quantity/quality; water supply; **hydropower**; agricultural production; fisheries; transport; ecotourism; trade...
- Political decisions – not just legal or economic

Sharing benefits: possible mechanisms

- Water sharing
 - (Re)assigning rights
- Payments for water
 - Payment for use rights, bilateral sale or water markets
- Payments for benefits
 - Compensation for lost benefits, payments to allow new uses
- Purchase agreements – **power**, agriculture, etc.
 - Agreed price can effect a transfer of benefits
- Financing & ownership arrangements
 - Agreed terms can effect a transfer of benefits
- Bundling broader benefits
 - Trade, transport...

Benefit sharing along the continuum



...Beyond the river ...

- In all basins there are multiple agendas, and many types of benefits to be gained
- Cooperation or dispute: choice determined by perceptions of benefits
- Different types of cooperation “right” for different cases
- Recognize the broadest possible bundle of benefits: some obvious, others less so
- Share benefits &/or water fairly; explore innovative sharing mechanisms
- Perception of fairness essential to sustain cooperation
- Rivers can be obstacles or entry points – both directly & beyond the river

Water, power & benefits

- The water & power linkages in Africa are very great
- Multipurpose storage (large & small) critical strategy for addressing hydrological variability & for power generation
- Investments in power generation will bring great benefits to water resources & vice versa
- Benefits of power interconnection & trade provide major incentives for cooperation “beyond the river”: the web of interdependency
- Innovative benefit-sharing mechanisms could even include joint ownership of assets, joint operating companies
- Major investments in power trade can transform economies
- **Such transformation will need vision, innovation & boldness ...**

Nile Basin Initiative

Nile Equatorial Lakes Subsidiary Action Program

**NILE EQUATORIAL LAKES
SUBSIDIARY ACTION
PROGRAM
(NELSAP)**

Nile Basin Initiative

Nile Equatorial Lakes Subsidiary Action Program

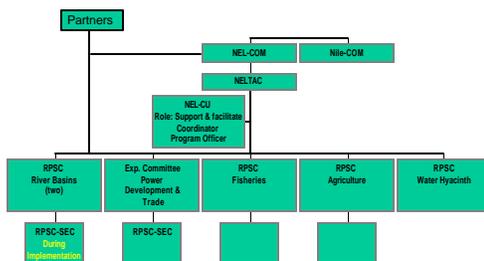
**NELSAP Power
Development and
Trade Sub-Program**

- Burundi
- DRC
- Egypt
- Kenya
- Rwanda
- Sudan
- Tanzania
- Uganda

Nile Basin Initiative

Nile Equatorial Lakes Subsidiary Action Program

NELSAP ORGANOGRAM



**NELSAP POWER DEVELOPMENT
AND TRADE SUB-PROGRAM**

Long-term objectives as defined in 2001:

- Regional economic development and improved quality of life through provision of ample power supply at reasonable prices.
- Increased regional power supply in the NEL Region.
- Improved reliability of power supply and the quality of power delivered through interconnecting the isolated networks.
- Complementarity, SVP, EAC, SAPP (in the long term), etc.

NELSAP POWER DEVELOPMENT AND TRADE SUB-PROGRAM

Immediate objectives as agreed by power experts in Kisumu, May 2002:

- Focus on the power development and the network expansion in Burundi, Rwanda, and Tanzania
- Provide decisionmakers with guidance on the development steps required to achieve the long-term objectives in the most efficient, economic, and environmentally acceptable manner

SSEA of Power Development Options Stage 1 & 2 in NEL Region

- *Objective:* undertake an inclusive and participatory strategic/sectoral social and environmental assessment of power development options, including ranking of options.
- *Expected outcome:* power strategy that will put forth different power development options, including an assessment of economic and engineering feasibility, environmental and social impacts.
- SSEA will allow for informed and transparent decision-making in the selection of power investments taking into account other regional frameworks such as the EAC Master Plan.

SSEA of Power Development Options

Work includes:

- Assessment of energy policies and legal and administrative framework in the three countries
- Energy needs assessment
- Power options identification
- Cumulative impacts assessment
- Comparative analysis of power options
- Mitigation plan for selected power option alternatives

Public consultations will be an integral part of the study

SSEA of Power Development Options in Burundi, Rwanda, and Western Tanzania

- Expected start-up date: July 2003, 2-year duration
- Regional Steering Committee to be formally established by August 2003
- Estimated cost stage 1 & 2: \$US1,600,000

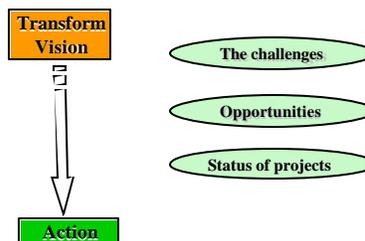
Nile Basin Initiative

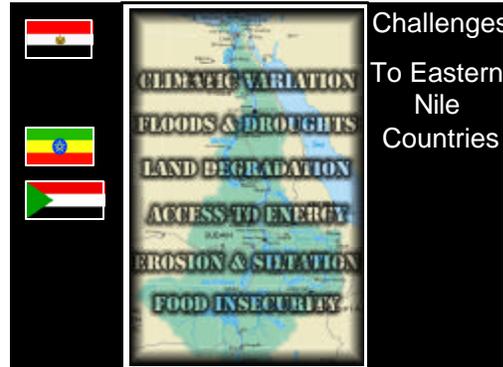
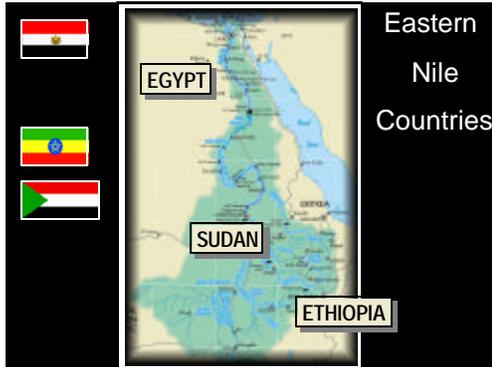
Eastern Nile Subsidiary Action Program (ENSAP)

**First Meeting of Nile Basin Ministers Responsible for Electricity
Dar es Salaam, Tanzania
May 20–21, 2003**

Overview

ENSAP Power Program



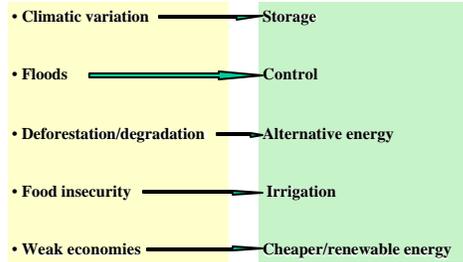


Opportunities

- Can produce more **Power**
 - Ethiopia 30,000 MW
 - Sudan 5,000 MW
- Can Produce more **Water** Saving Evaporation
- Can Produce More **Food**

5

How can **hydropower** address challenges?



ENSAP power projects

1. Power interconnection between Ethiopia and Sudan
2. Eastern Nile power trade investment
 - a) Transmission interconnection
 - b) Site-specific projects
 - Karadobi, Birbir, Baro, Geba, etc.
 - Merowe, Upper Atbara, Kagbar, Shirik, etc.

7

ENSAP power projects

1. Power interconnection between Ethiopia and Sudan
2. Eastern Nile power trade investment
 - a) Transmission interconnection
 - b) Site-specific projects
 - Karadobi, Birbir, Baro, Geba, etc.
 - Merowe, Upper Atbara, Kagbar, Shirik, etc.

7

Next steps

- Conduct regional assessment of EN-power trade
- Update interconnection study
- Conduct the EIA for the interconnection project.
- Develop public-private partnership (ENVEST Forum)
- Strengthen and expand the ENSAP donor partnership

9

Institutional arrangements

- ENTRO established June 6, 2002
- Legal status in three countries
- Fully operational

10

ENTRO'S APPROACH

Working together the countries can get all types of benefits.



Use Regional Assessments as a tool to identify, assess, and foster opportunities to motivate cooperation.

11

ENTRO'S APPROACH

Ensure:

Ownership,

Participation,

Effective Information Exchange,

and Consensus.

12

ENTRO'S APPROACH

Facilitate early actions,

pick the low hanging fruit,

and seek optimum level of cooperation.

13

Conclusion

Transform Vision



Action

Faster Implementation of Hydropower



Could Lead to Economic Transformation



Build Confidence and Peace



Promote Cooperation



Results in Economic Integration

Annex 6

Session 3 Presentations

The benefits of power trade and its contribution to regional economic development

First Meeting of the Nile Basin Ministers
Responsible for Electricity
Dar es Salaam May 20–21, 2003

Prof Anton Eberhard

University of Cape Town
with assistance from Mark Davis/Econ

The role of power trade in regional economic development

Contents of presentation

- Experiences from other regions:
 - Case studies from around the world
 - SAPP in particular
- Potential benefits from regional trade in Nile Basin
 - For the power sector (direct benefits)
 - For the economies in general (indirect benefits)

The role of power trade in regional economic development

Mekong Basin power trade

- Cambodia, Lao PDR, Myanmar, Thailand, Vietnam, and China's Yunnan Province planning common power trade
- ESMAP / APEC studies
- Investments needed in transmission & generation
- Savings of \$10 billion to 2020 estimated compared with self-sufficiency

The role of power trade in regional economic development

South America - CIER

- Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Venezuela and Uruguay: 80% hydro, large T distances
- Regional Electricity Markets Interconnection (REMI) initiative of World Bank/ESMAP
- Stepwise project to strengthen existing interconnections and gradual building up of bilateral and multilateral trade
- Estimated annual operating cost reductions:
 - Argentina-Brazil = \$650 million
 - Peru-Ecuador- Colombia-Venezuela = \$310 million
 - Brazil-Uruguay = \$60 million
 - Chile-Peru = \$60 million

The role of power trade in regional economic development

Sistema de Interconexion Electrica de Paises de America Central (SIEPAC)

- Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua & Panama: small economies, not currently interconnected, large infrastructure investments needed
- Some national market reform, but regional interconnection needed to further deliver benefits
- Planning new 1,800-km interconnection -> SIEPAC <- IDB
- Institution building, regulatory harmonization
- Planning wholesale regional market
- Benefits estimated: \$100 million to \$1 billion

The role of power trade in regional economic development

Common Baltic Electricity Market (CBEM)

- Estonia, Latvia, and Lithuania in process of establishing a market for electricity trade
- Investments in place, interconnected also with Russia
- Jointly owned, common dispatch centre (Riga)
- History of bilateral trades, 50–80% of consumption
- Gradual market liberalization, and contestability
- Ministries/regulators/TSO - harmonization of codes
- Moving toward voluntary bilateral contract market with balancing pool
- Baltic Ring - > potential benefits Euros 110 million p.a.

The role of power trade in regional economic development

Southern African Power Pool

- South Africa, Namibia, Botswana, Lesotho Swaziland, Mozambique, Zimbabwe, Zambia, Malawi, Tanzania, Angola, DRC
- Bilateral trade over four decades
- Large regional hydro potential
- 1993: Integrated Operating and Planning Committee formed between BPC, ZESA and ZESCO, then Eskom and Snel
- 1995: SADC signs Intergovernmental MOU -> created SAPP -> Interutility MOU -> Agreement between operating members

The role of power trade in regional economic development

Southern African Power Pool

- Purpose:
 - To allow members to coordinate planning and operation of their systems while maintaining reliability, autonomy and self-sufficiency, and to share in the benefits of operating the pool
- Organization:
 - Three-tier; Executive Committee, Management Committee and three subcommittees for Planning, Operating, and Environment
 - SAPP Coordination Center in Harare established in 1999

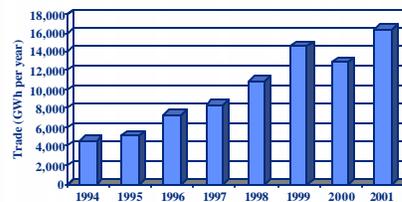
The role of power trade in regional economic development

Southern African Power Pool

- A right to use available transmission capacity
- Firm and nonfirm wheeling arrangements
- 13 types of contracts with agreed set of rates for
 - firm (>7 days)
 - interruptible (> 7 days)
 - interruptible (notice up to 24 hrs)
 - mutual support – e.g., operating reserve, emergency, etc.
- New: Short-Term Energy Market (STEM)
 - Offers and bids for daily contracts, also hour ahead
 - Congestion constraints
 - Trade potential outstrips transmission capacity
 - Small volumes
- SAPP pool plan, capacity expansion with prioritized sequence
- Estimated savings to 2010: \$935 million

The role of power trade in regional economic development

Increase in power trade in SAPP¹



The role of power trade in regional economic development

Percentage dependence on electricity imports

- Swaziland 77%
- Botswana 55%
- Namibia 46%
- Zimbabwe 43%
- Lesotho 10%
- South Africa 3%

The role of power trade in regional economic development

Direct benefits of SAPP power trade

	SNEL	ZESCO	ZESA	BPC	Eskom	Tanesco	General
Increased use of existing surplus capacity	X						
Increased viability of interconnections		X				X	
Advantages from wheeling		X	X	X	X		
Postponement of new generation			X	X	X	X	
Lower cost alternative supply source			X	X	X	X	X
Increased reliability of supply							X

The role of power trade in regional economic development

Indirect benefits of SAPP power trade

- Foreign currency revenues to exporting countries like DRC, Zambia, and Mozambique
- Stimulus of economic activity in importing countries like Botswana and Zimbabwe
- South Africa has had improved access to peaking power and a wider market for Eskom's base load.
- When SA market is opened, increased potential for generation investments in neighboring countries -> more balanced economic interdependence

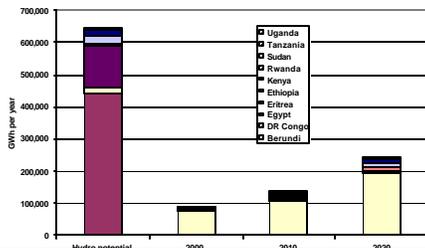
The role of power trade in regional economic development

Some overall observations: // lessons

- Many intercountry power cooperation and trading initiatives around the world
 - Some regions involve long transmission distances
 - Others include poor countries
 - Many include hydroelectric potential
- Many studies show potential benefits
- Important to create & evolve institutional framework for cooperation: from bilateral to multilateral, political commitment
- Important to strengthen transmission interconnectors
- Important to seek harmonization of regulatory environment, grid-codes and market rules
- Movement to more sophisticated trading market is last step and is contingent on the introduction of choice and competition

The role of power trade in regional economic development

Nile basin has huge potential for cooperative development of hydro resources and increased interconnection and trade



The role of power trade in regional economic development

Direct benefits of cooperation in power sector

- Lower energy costs
 - Imports could be cheaper than self-generation
- Lower investment costs:
 - Economies of scale: regional projects justify larger generation plant
 - Shared reserve margins
- New and additional investment possible because risk can be lower in collaborative projects
 - Innovative asset ownership and financing
- Improved reliability and security of supply
 - Imports possible during emergency outages or periods of insufficient firm capacity (e.g., national drought)

The role of power trade in regional economic development

Potential benefits to wider economy

- Increased economic activity
 - More reliable supplies at lower cost
- Social and developmental benefits:
 - Increased power availability allows parallel electrification program – urban/rural/services
- Multipurpose benefits:
 - e.g., irrigation, navigation, flood and drought management
- Environmental benefits
 - Reduction on fossil fuel dependence (e.g., diesel)
- Fiscal benefits:
 - Reduced costs and increased space for private capital, reduced financial burden on public sector
- Peace and regional security through economic integration

The role of power trade in regional economic development

The way forward

To be able to realise the benefits, institutional and infrastructure development must be given time and priority.

Path to a regional power market



The role of power trade in regional economic development



Review of the Regional Power Trade Project and Key Implementation Issues

- Project Design
- Implementation Arrangements
- Budget & Financing

Goal and Objective

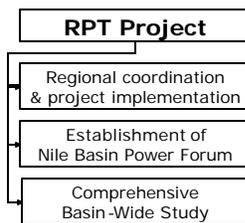
Long-Term Goal

- Improve access to reliable and low-cost power in an environmentally sustainable manner

Development Objective

- Establish the institutional means to coordinate the development of regional power markets among the Nile Basin countries

PROJECT COMPONENTS



Implemented over a four-year period

1. REGIONAL COORDINATION AND PROJECT IMPLEMENTATION

- Project governance & implementation
 - Steering & Technical committees
 - Project Management Unit & staff
- Regional coordination with other SVP and SAP projects
- Knowledge management
 - Information dissemination
 - Stakeholder analysis

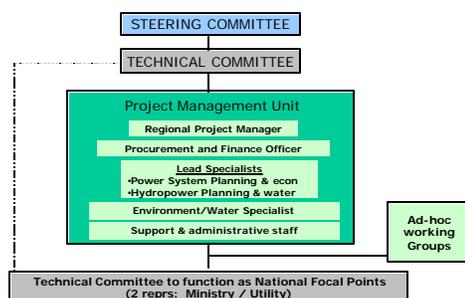
2. ESTABLISHMENT OF NILE BASIN POWER FORUM

- Establish Power Forum:
 - Define its role & functions
 - Define long-term institutional set-up
 - Initiate Forum activities
- Includes following activities:
 - Long-term planning & analytical tools
 - Training and skills enhancement
 - Financial resource mobilization
 - Conduct special studies

3. Comprehensive Basin-Wide Study

- Study objective
 - Analyze power supply, demand & trade opportunities in the region
 - In the context of multipurpose water resources development
- Inception study to be undertaken first
 - Review previous studies
 - Data availability & data requirements
- Sequence full study to incorporate results of SAP studies and operate within funding constraints

Institutional Structure



THE NBI Project Execution

- NBI, thru NBI Secretariat, will be the executing agency for each SVP project
- NBI appointed UNOPS as Project Services Agency, to assist with:
 - Financial management & procurement
 - Capacity building for project management

PROJECT STEERING COMMITTEE

- Provide strategic guidance, direction & oversight
- Membership
 - Ministry PS (or equiv.) and Utility CEO (or equiv.)
 - Nile-TAC member from host country
 - NBI-SEC representative
- Observers
 - ENTRO/NEL-CU representatives as link to SAPs
 - Development partners, World Bank, UNOPS
- Meet at least annually
- Governments contribute staff time

TECHNICAL COMMITTEE

- Responsibilities
 - Provide technical guidance and endorse workplans & TORs
 - Participate in regional meetings & activities
 - Serve as national focal point for each country
- Membership
 - Ministry reps: expert in sector reform/deregulation
 - Utility reps: expert in system planning
 - ENTRO/NEL-CU reprs invited to participate as link to SAPs
- Meet at least twice a year
- Government contributes staff time
 - Approx 4–6 weeks per year

PROJECT MANAGEMENT UNIT

- PMU will:
 - operate at the basin-wide level
 - be located in Dar es Salaam, Tanzania, with offices facilities provided by host country
- PMU functions include:
 - Coordinate & implement project activities
 - Liaise between Steering & Technical committees
 - Liaise with NBI Secretariat to ensure integration with SVP
 - Convene temporary, ad-hoc working groups as needed

SVP COORDINATION

- Basin-wide level: NBI Secretariat, through the SVP Coordination project:
 - Overall program coordination & integration
 - Oversight of financial management
 - Knowledge management & information sharing
 - Monitoring and evaluation at the program level
- Within each country: National NBI Office
 - Govt supported, within ministry of water affairs
 - Support to Nile-TAC
 - Counterpart to Nile -SEC at national level
 - Forum for coordination of NBI activities through intersectoral committees (likely to include PSC and TC members)

PROJECT COST

Component	Cost (US\$ million)
Regional coordination and implementation	4.23
Establishment Power Forum	3.40
Basin-wide study	4.50
Total base cost	12.1
Contingencies	0.93
Total project cost	13.1

PROJECT FINANCING

Estimated Cost	Pledges		Financing Needed
	Partners	Total	
US\$ 13 million	Norway	US\$ 4 million	US\$ 5 million
	Sweden	US\$ 2 million	
	AfDB	US\$ 2 million	
	TOTAL	US\$ 8 million	

All financing through the multidonor NBTF

Annex 7

Long-term Vision—Nile Basin Power Forum

The Power Forum is a regional, self-sustaining, legally established institution that:

- Manages and updates a database of regional power systems
- Develops regional plans for expanding generation and transmission
- Stimulates subsidiary-level project investment for regional interconnection
- Facilitates a common understanding on a power sector reform strategy and a harmonized regulatory regime
- Designs the power market and establishes standards for operation of the interconnected system
- Promotes cooperation in regional power trade, the development of a power market
- Ensures an equitable trading regime for all participants in the regional power market
- Achieves the confidence of all participants in the regional power market through a strong transparent decisionmaking process
- Facilitates a learning environment for understanding the nuances of legal, regulatory, and pricing regimes required for regional power trade
- Liaises with similar forums in other regions.

It is expected that, over time, the Power Forum will facilitate the formation of three new entities: a regulatory forum, a regional dispatch center, and a power exchange. The Power Forum will continue to function as a regional planning agency.

Annex 8

Dar es Salaam Declaration on Regional Electric Power Trade

We, the ministers responsible for electricity affairs in the countries of Burundi, Democratic Republic of Congo, Egypt, Eritrea,² Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda, make the following declaration.

We recognize that

Cooperation can achieve sustainable socio-economic development through the equitable utilization of and benefit from, the common Nile Basin water resources;

Cooperation in the development of electric power resources in the Nile Basin, including, inter alia, investments in hydro-generation, transmission, and the development and integration of electricity markets, are vitally important strategies for optimizing system benefits; and this cooperation will also realize developmental benefits, including economic prosperity, poverty reduction, peace, and environmental sustainability; and

Cooperation in the establishment of a Nile Basin Power Forum is a desirable means for achieving these benefits;

And, we further recognize the growing cooperation in the Nile Basin, including

The Shared Vision of the Nile Basin Initiative adopted by the Nile Council of Ministers in Dar es Salaam on 22 February 1999;

The detailed preparation of the Shared Vision Program (SVP) through multicountry, multisectoral and participatory processes, including a Nile Basin Regional Power Trade project with the proposal to set up a Nile Basin Power Forum;

Subsidiary Action Programs—the Eastern Nile Subsidiary Action Program (ENSAP) and the Nile Equatorial Lakes Subsidiary Action Program (NELSAP)—to plan and implement power sector investments and activities at a subregional level; and

The importance of effective coordination with other initiatives in power generation, transmission, and trade in electricity in the Nile Basin.

² Eritrea is participating actively in the NBI in an observer capacity and has stated its intention to participate fully soon.

We adopt

The long-term vision for the Nile Basin Power Forum that, inter alia, increases cooperation in the development of regional plans and investment for expanding generation and transmission; facilitates common understanding of power sector reform strategies and harmonized regulatory regimes; promotes power trade; ensures equitable trading regimes; facilitates learning, and supports new information and communication technologies.

We approve

The Regional Power Trade project implementation plan, including the establishment of a Nile Basin Power Forum.

We agree

To meet periodically to review progress of the SVP Regional Power Trade project and the power investment programs under the Subsidiary Action Programs

May 20, 2003