

Revised WAPP Generation and Transmission Master Plan

WAPP Priority Projects

TABLE I: Project Preparatory Studies (US\$ thousands)

No.	Project	Type of Study	Objective	Cost of Study	Funds Committed	Funding under Negotiation	Funding Out	Funding Sources	Project Status	Follow-up Actions Required
A. WAPP Coastal Transmission Sub-program										
1	Chirani-Cote d'Ivoire (Cote d'Ivoire) (Pre-Feasibility)	Feasibility + ESD + Bidding Doc	To provide adequate capacity for interconnected power trade between Ghana and Cote d'Ivoire	1 750	1 750	0	0	EU/Alma Trust Fund/IB	ONGOING: Contract Agreement signed with EU/Alma Infrastructure Trust Fund. Call for EDS launched.	WAPP to finalize ESD and submit completed profile of contracting terms to EIS for No Objection.
2	Emergency Preparedness Plans for High Voltage Transmission - Kpong (VRA-Nangaparai) (Cote d'Ivoire)	Design Study, Bidding Doc	To prepare Emergency Preparedness Plans for sub-regional hydropower plants	1 400	1 400	0	0	WIBSA	ONGOING: Funding for Kpong and Nangaparai study under AP1.1. Contract for Kpong and Nangaparai study under AP1.1. Contract for Kpong and Nangaparai study under AP1.1. Contract for Kpong and Nangaparai study under AP1.1.	EIS to arrange implementation of Kpong study.
SUBTOTAL				3 150	3 150	0	0			
B. WAPP Intra-Zonal Transmission Hub Sub-program										
3	220 kV Buihuan-Donkoye (Ghana - Burkina Faso Interconnection)	Feasibility Update + Environmental Update + Bidding Doc	To reconstruct the networks of Ghana and Burkina Faso for export of lower cost power from Ghana.	1 500	1 500			NE/PDF/PPF USAID, AFD-CESA, SIDA/SEI, VIB	ONGOING: Contracts signed February 21, 2008 for preparation of studies. Low Flow Study in Ghana completed and marketing being finalized. Preliminary feasibility study report submitted. Project earmarked to be implemented under P.F.S. Expected completion in May 2009.	Low Flow study in Burkina to be finalized and Feasibility Report to be reviewed and adopted. WAPP to manage implementation of studies.
4	220 kV Tudu-Tudu (Ghana)	Engineering, ESD + Bidding Doc	To create current transmission links in Ghana as pre-condition for Ghana - Burkina Faso - Mali interconnection	370	370			WIBSA	ONGOING: VIB reviewing for VIB preparation of Engineering, ESD and bidding package included in AP1.1. Placement of contracts by VIB completed and contracts signed for Engineering Study and ESD study. Project earmarked to be implemented under AP1.1.	EIS to manage implementation of pre-treatment studies.
5	220 kV Akassa-Princesse (Ghana)	Engineering, ESD + Bidding Doc	To provide adequate capacity for interconnected power trade between Ghana, Cote d'Ivoire, Burkina Faso, Mali and the COMECS region.	850	850			WIBSA	ONGOING: VIB reviewing for VIB preparation of Engineering, ESD and bidding package included in AP1.1. Placement of contracts by VIB completed and contracts signed for Engineering Study and ESD study. Project earmarked to be implemented under AP1.1.	EIS to manage implementation of pre-treatment studies.
6	Ghana - Mali Interconnection Project (Ghana - Mali)	Feasibility + ESD + Bidding Doc	To reconstruct the networks of Ghana and Mali to export lower cost power from Ghana.	2 400		2 400	0	AIDB	FUNDING REQUIRED: Draft TOR documents for pre-treatment studies on being finalized and a Request for funding shall be sent to WAPP Secretariat.	WAPP to secure funding for implementation of pre-treatment studies.
7	220 kV Labele-Krachi Transmission Line (Cote d'Ivoire)	Feasibility Update + ESD Update + Bidding Doc	To reconstruct the Cote d'Ivoire network to enable support power exchanges with Mali and Burkina Faso.	2 300		2 300	0	WIB/AFD	FUNDING REQUIRED: Donor Consultation Meeting held in June 2007 in Abidjan to re-launch projects. Cost of Cote d'Ivoire in negotiation with Govt of Mali to secure funding for implementation project. IDB and ESD have indicated firm interest to participate in the funding of the project. Feasibility Study update and ESD required.	WAPP to secure funding for implementation of pre-treatment studies. IDB/EIS to update WAPP on progress of implementation.
8	High-Voltage Dabon-Dabon-Ghana (Ghana - Burkina Faso - Mali Interconnection)	Feasibility + ESD + Bidding Doc	To reconstruct the networks of Ghana, Burkina Faso and Mali for export of lower cost power from Ghana.	2 500	2 500		0	EIS	ONGOING: Contracts for preparation of pre-treatment studies signed in July 2007 with WFP/EC. Environmental Permits received in Mali and Ghana. Final ESD reports being reviewed in Burkina Faso. Feasibility Study to be prepared. Project earmarked to be implemented under AP1.1. Expected completion of studies in December 2009.	WAPP to secure Environmental Permit in Burkina Faso and continue to manage implementation of studies.
SUBTOTAL				18 471	8 228	2 400	2 300			
C. WAPP North-Cote Transmission Sub-program										
9	WAPP Nankoro 330 kV Project (Nigeria - Niger - Burkina Faso Interconnection)	Feasibility	To reconstruct the networks of Nigeria, Niger, Benin and Burkina Faso.	400	400			MO/IEC, CER, PFD, UN/EPF, UN/EPF (D/line)	ONGOING: MO/IEC received updated outcome of Consultant's report in December 2007. Implementation of implementation study was recommended and are being currently implemented.	WAPP to continue to manage implementation of implementation studies and proceed report to WAPP upon completion.
10	Rehabilitation of High Voltage Facilities (Kamp, Abidjan)	Design Study, Bidding Doc	Rehabilitation of high voltage facilities to improve delivery of ancillary services and sub-regional power balancing capabilities.	500	500			WIBSA	COMPLETED: WAPP and VIB signed Consultant's Agreement in 2007 for the monitoring of implementation of the rehabilitation of the high-voltage related aspects of the Kamp and Delta Dam. Contractor for rehabilitation recruited.	WAPP to report VIB on the monitoring of the work on the electro-mechanical component of the rehabilitation.
SUBTOTAL				900	900	0	0			
D. WAPP OMVG + OMVS Power System Development Sub-program										
11	220 kV OMVG Lora (Guinea, Guinea Bissau, Sierra Leone Interconnection) + Hydro sites at Koina and Sankharigah	Design Study, ESD, Studies & Bidding Document	To reconstruct the networks of Guinea, Guinea Bissau, Sierra Leone and the OMVG network.	5 348	5 348	0	0	AID, ECOWAS, OMVG, Burkina Faso, VIB-PPWF	COMPLETED: Final reports validated in December 2008. International study completed.	WAPP to update WAPP on progress of project implementation.
12	Guinea Bissau Component	Design Study	To provide emergency support to EAGB	100	100			WAPP	COMPLETED: WAPP provided Technical capacity building to AIGB in May 2008.	
13	Guinea Component	Indicative Planning	To develop an emergency program for Guinea Bissau in anticipation of the advent of OMVG.	20	20			ECOWAS - WAPP	COMPLETED: ECOWAS, with support from WAPP, is providing financial support and developing an emergency program in line with outcome of 2008 Meeting of ECOWAS Heads of State held in Abuja, Dec 15, 2008. ECOWAS/WAPP Approval received to Guinea Bissau in February 2009. Project Approval document prepared by WAPP and accepted by ECOWAS and Govt of Guinea Bissau. Donor Roundtable Mtg. on Guinea planned in October 2009.	WAPP to participate in Donor Roundtable on G. Bissau in October 2009 in Abidjan.
14	The Gambia Component Program	Indicative Planning	To define required works to be done in order to optimally absorb energy from OMVG network	1000		1000			FUNDING REQUIRED: Project Concept Documents developed by WAPP Secretariat.	OMVG to submit Funding requests to Donor WAPP Secretariat.
15	Guinea Component, Coastal Guinea Area	Indicative Planning	To define required works to be done in order to optimally absorb energy from OMVG network	1000		1000			FUNDING REQUIRED: Project Concept Documents already prepared by WAPP Secretariat. AIDB providing assistance, IDB have indicated to provide assistance.	WAPP to update WAPP on assistance being provided by AIDB and IDB.
16	Optimal Strategy for Hydro-power Resource Development in Guinea	Strategic	To formulate a coherent strategy for the development of hydroelectric power resources in Guinea in a manner that would maximize cost of investments, reduce the burden on public finances, and maximize the benefits to Guinea and take into consideration regional development already in place.	65	65			WIB/PPWF	ONGOING: Studies in progress. Draft report submitted.	Govt of Guinea to adopt outcome of study.
17	OMVG Guinea Hydro Power Project	Environmental, Bidding Doc	To augment hydro-power capacity of OMVG power system.	500	500			WIBSA	ONGOING: Studies in progress, target completion June 2009.	OMVG to update Donor Coordination Meeting on progress of the project.
18	Sierra Leone Hydro-power + 515 MW, 2,400 GWh	Feasibility Update + Environmental + Bidding Doc	Provide hydro-power to Guinea, Sierra Leone and other OMVG countries.	5000		5000	0	WIB	PROCESSING FOR FUNDING: TORs for studies have been prepared and Request submitted to WIB.	GENELEC and EDCG to update WAPP on progress of project.
SUBTOTAL				13 611	8 921	0	7 000			
E. WAPP Strategic Generation Sub-program										
19	220 kV 330 MW OCCT (Ghana)	Feasibility	To increase generation resource capacity in Ghana to support WAPP Zone C.	400		400	0	VRA	ONGOING: VRA currently implementing study to bring project to bankable stage.	WAPP to update WAPP on progress of project implementation.
20	Emergency Power Supply Security Plan	Strategic	To develop an urgent plan for emergency power supply to WAPP Members and ECOWAS Member States to avert power outages.	170	170			SUDA	COMPLETED: Outcome of call Track Study was endorsed by meeting of WAPP Strategic Planning and Environmental Committee and recommended for submission to Executive Board. SUDA and ECOWAS have submitted proposals in line with the outcome of the study.	Chairman of ECOWAS Heads of State and Government endorsed in January 2008. Implementation of WAPP EPPSP.
	Mesa Gambia	Feasibility, ESD	To prepare the 450 MW WAPP Mesa Gambia Power Project for implementation.	1300	1300			KEPCO	COMPLETED: Feasibility Study and Environmental and Social Impact Assessment Study completed. All facilities of land have been released from Govt of Benin to develop project.	WAPP (JCI) to secure Environmental Permits for implementation of project.
	Project Development		To further develop the 450 MW WAPP Mesa Gambia Power Project for implementation.	222	222			WAPP, USAID	ONGOING: MOU with Strategic Partner signed. Draft Joint Development Agreement (JDA) has been developed and is being reviewed with support from USAID.	WAPP (JCI) with USAID to complete review of JDA and finalize with Strategic Partner.
	Abidjan	Feasibility, ESD	To prepare the 400 MW WAPP Abidjan Power Project for implementation.	1000	500	500	0	Jakobson AS	ONGOING: MOU with Strategic Partner signed. Feasibility Study ongoing. Status of land in Ghana is ongoing.	WAPP to secure land in Ghana. Jakobson AS to complete pre-treatment studies and submit outcome to WAPP for review and adoption.
SUBTOTAL				3 992	2 192	500	400			
F. WAPP Update of Master Plan										
21	Update of WAPP Master Plan	Strategic	To update the revised 2006 WAPP Master Plan and develop a more realistic investment program for the development of the WAPP.	1048		1048	0	EU/Alma Trust Fund/IB, ECOWAS, ECOWAS, WAPP Members	ONGOING: Terms of Reference developed and Request for funding sent to EU/Alma Infrastructure Trust Fund through IDB for approval. ECOWAS Commission is contributing towards the implementation of the study.	WAPP to follow up with EIB to secure funding.
SUBTOTAL				1 048	0	1 048	0			
G. WAPP CLSD (Cote d'Ivoire, Liberia, Sierra Leone, Guinea) Re-development Sub-program										
22	Cote d'Ivoire - Liberia - Sierra Leone WAPP Interconnection	Feasibility, ESD	Reconstruct feasibility of Cote d'Ivoire - Liberia - Sierra Leone Interconnection.	8 500	8 500			EU/Alma Trust Fund/IB, WAPP	ONGOING: Consultants recruited in September 2008 to implement pre-treatment studies and mobilization in progress. Studies in progress and expected completion, April 2009. WAPP is securing funding for preparation of Bidding Documents.	WAPP to manage implementation of pre-treatment studies and secure funding for preparation of Bidding Documents.
	Project Development		Establishment of Special Purpose Company, Commission Cote d'Ivoire Study, Support to Ministries in charge of energy and utilities in countries concerned, etc.	1 200	1 200			WIB	ONGOING: VIB establishing Project Preparation Facility to further develop project and support establishment of SPC. Joint WAPP/VIB consultation and Mtg in Monrovia with Govt of Liberia to finalize PPP documents.	WAPP to follow with VIB to establish PPP.
	Institutional		Establishment of Special Purpose Company	185	185			PPVAF, ESMAP	ONGOING: WAPP joint implementation Committee already established. Recruitment of consultants in progress to implement Technical Assistance.	WAPP to follow with WIB on consultant recruitment process.
23	Masterplan Study for LSS System and Gas Interconnector	Indicative Planning Study	Indicate national Master plan for utilization of power from WAPP system.	7		7	0	EU, WIBSA, AIDB, IDB	IN PROGRESS: EU indicated interest to support Liberia, WIB and AIDB providing assistance. IDB has indicated interest to participate in the improvement of Guinea network.	AIC to update WAPP on progress by EU to Liberia. WIB to update WAPP on progress by WIB to Liberia. AIDB and IDB to update WAPP on progress by AIDB and IDB.
24	Rehabilitation and re-energization of West-Central AC, West Hydro Plants	Engineering, ESD	Reconstruction of hydro-power and interconnection facilities to restore power supply to West-Central AC.	400	400			USTDA, IFC	COMPLETED: Study completed in December 2008.	AIC to update WAPP on next steps.
25	Development scheme of hydro-power resources of Liberia (Pongoro, Demomora River Feasibility Study)	Indicative Planning Study	To prepare a development scheme of the hydro-power resources of Liberia.	5 500		5 500	0		ONGOING: WAPP received letter of request from Ministry of Lands, Mines and Energy of Liberia to support implementation of a study to establish a development scheme of the hydro-power resources of Liberia. TOR for study being developed.	WAPP and Govt of Liberia to finalize TOR and submit to WAPP Donors for funding.
26	Sierra Leone 1320 MW Reservoir expansion	Engineering, ESD	To augment power generation capacity in Sierra Leone.	1 000		1 000	0	WIB/ESMAP	ONGOING: Project Concept Documents already developed by consultants. TOR for study being developed.	WAPP and WFP to finalize TOR and submit to WAPP Donors for funding.
SUBTOTAL				12 835	8 534	0	6 500			
GRAND TOTAL				43 488	23 158	4 808	10 400			

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WAPP Priority Projects

TABLE 3: Capacity Building (US\$ millions)

No.	Project	Objective	Cost	Funds Committed	Funding under Negotiation	Financing Gap	Funding Sources	Project Status	Followup Actions Required
A: WAPP Capacity Building for ICC									
1	WAPP Organization & Information and Coordination Centre	To transform ECOWAS Energy Observatory into the Information and Coordination Centre	14	2,5		11,5		ONGOING: Funding secured from KOICA for KEPCO to implement detailed study on ICC. "Record of Discussions" signed with KOICA in December 2007. Implementation of project in progress. Feasibility and Basic Design Study completed and adopted. Research for funding to implement WAPP ICC in progress.	WAPP to secure funding for realisation of WAPP ICC
2	M & E	To develop capacity for coordination and information sharing/exchange for WAPP operations	1	0,63		0,37	WB/IDF	ONGOING: Grant secured from WB-IDF to support development of M&E and MIS systems. Grant Agreement signed in September 2008. No Objection of WB received on proposed shortlist of Consultants and Request For Proposal dispatched.	WAPP to complete process to recruit Consultant(s)
3	WAPP Connectivity	To leverage excess fiber communications capacity on the high-voltage cross-border power transmission infrastructure of West African Power Pool (WAPP) in order to address regional communications infrastructure gaps and create an integrated regional communications market	0,85	0,85		0	PPIAF, ESMAP	ONGOING: Consultant for Technical Study completed. Recruitment of Consultant for Financial Study in progress. Coordinator was seconded to the WAPP from the Electricity Company of Ghana to coordinate among others, the implementation of the studies.	WAPP to follow up with World Bank on recruitment of Consultant for Financial Study and kick off Technical Study.
4	WAPP Operations Manual (OSMP)	To ensure the smooth and coordinated operation of the WAPP interconnected system - <i>Recruitment of Advisory Panel</i>	0,25	0,25		0	WB/IDA, USAID	ONGOING: Operations manual developed by WAPP Taskforce with inkind support from USAID; CEB and VRA have already secured funding from WB to set up advisory panels to assist in implementing OSMP. Recruitment of Advisory Panel under APL1 in progress.	WAPP to follow up with VRA and WB on the recruitment of Advisory Panel
		To ensure the smooth and coordinated operation of the WAPP interconnected system - <i>Development of Specific Operating Procedures and instructions for Control Area Centres (CACs)</i>	0,41		0,41			ONGOING: Operations manual developed by WAPP Taskforce with inkind support from USAID; Technical Assistance needed to develop specific operating procedures for each WAPP ICC CAC.	WAPP to engage Donors and secure Technical Assistance
		To ensure the smooth and coordinated operation of the WAPP interconnected system - <i>Capacity Building for System Operators</i>	2,27		2,27			ONGOING: Operations manual developed by WAPP Taskforce with inkind support from USAID; Technical assistance needed to develop and implement among others, a certification program for WAPP System Operators.	WAPP to engage Donors and secure Technical Assistance
		To ensure the smooth and coordinated operation of the WAPP interconnected system - <i>Development of harmonized protection plan for WAPP interconnected system</i>	0,61		0,61			ONGOING: Operations manual developed by WAPP Taskforce with inkind support from USAID; Technical Assistance needed to develop a harmonized protection plan for WAPP interconnected system.	WAPP to engage Donors and secure Technical Assistance
5	Training	To develop capacity building programs for WAPP Members, making use of existing facilities at VRA and other utilities	4,5	3,5		1	WB/IDA	FUNDING REQUIRED: VRA has already secured funding from WB to upgrade the Akuse Training Facility. Nexant TA has developed a Capacity Building Program Initiative (CBPI) for WAPP that will feature the capacity building needs of WAPP	WAPP and VRA to assess requirements to upgrade Akuse and agree on training needs. WAPP and Nexant TA to finalise CBPI document.
SUBTOTAL			23,9	7,7	0,0	16,2			
B: WAPP Capacity Building for the PIPES									
6	Environmental Safeguards,	To improve capacity in environmental impact analysis and resettlement plan procedures	0,9			0,9		FUNDING REQUIRED: TOR already developed	WAPP to secure funding
7	Public Private Partnerships	To improve capacity of WAPP to establish Special Purpose Companies under framework of Public Private Partnerships	2,2			2,2		ONGOING: 2009 -2012 Business Plan has identified this as a fundamental need of the WAPP. Technical Assistance needed to build capacity and support the various WAPP JICs further develop their respective WAPP projects.	WAPP to secure funding
8	Planning, Project Management, Environmental Management	To improve capacity in the management of projects and environment	1,8	1,8			EU	ONGOING: Institutional support TA for Environmental Management now finished. Resident 3-yr TA from EU already mobilised at WAPP Secretariat.	Implement EU-WAPP workplan
SUBTOTAL			4,9	1,8	0	3,1			
C: Technical Assistance									
9	Startup of WAPP Secretariat	To support WAPP Secretariat during startup phase	7,0	7,0			USAID	ONGOING: 3-5 yr resident Technical Assistance provided by NEXANT Inc. since November 2005	Implement USAID-WAPP Workplan until 2010.
10	Institutional Support to WAPP Secretariat	To provide institutional support to WAPP Secretariat	0,4		0		USAID	ONGOING: USAID has conveyed its firm interest to provide direct support to WAPP Secretariat to further complement its resident TA envisaged to end in September 2010	WAPP to follow up with USAID to secure support.
SUBTOTAL			7,4	7,0	0,4	0,0			
GRAND TOTAL			36,2	16,5	0,4	19,3			