



*Regional Workshop on the ECOWAS Scale-Up Program for Small-Scale Hydro Power
16th to 20th of April 2012, Golden Gate Hotel, Monrovia, Liberia, <http://small-hydro.ecreee.org>*

Day One: 16 April 2012		
Capacity Building Workshop on SHP Project Development		
Location: Golden Gate Hotel, Monrovia / Liberia		
INTRODUCTION / WELCOME SESSION		
Time	Session	
08:30	1	<i>Welcome Notes (Government of Liberia, ECREEE, UNIDO, ESMAP)</i>
		Objectives of the workshop and the ECOWAS Small Scale Hydro Power Program, Mahama Kappiah/Martin Lugmayr, ECREEE/UNIDO
09:30	2	Explanation of agenda, logistics, proceedings of working groups, Hedi Feibel, workshop consultant
GENERAL AND TECHNICAL ASPECTS		
09:45	3	What are we talking about? (30 min) , Martin Bölli, workshop instructor overview on “small-scale hydropower” SHP; Comparative analysis of micro, mini, small hydro (and large hydro for comparison)
10:15	4	Questions and answers
10:30		Tea/coffee/cocoa break
		UNIDO Film: planned SHP in Sierra Leone (3 min)
11:00	5	The special challenge in W-Africa (30 min) , Oliver Froend, workshop instructor General difference between high head and small runoff compared to low head and high runoff.
11:30	6	Questions and answers (15 min)
11:45	7	What is the range of costs? (30 min) , Oliver Froend, workshop instructor Investment costs, operation costs, electricity production costs; etc.
12:15	8	Questions and answers (15 min)
12:30		Lunch break
14:00	9	Isolated versus grid-connected SHP systems (30 min) , Martin Bölli, → Comparative analysis between isolated and grid connected SHP: load factor, profitability, technical requirements (control unit, voltage level, transformer, transmission line...), etc.



14:30 Working groups	10	Discussion on “What shall be achieved in the MHP and SHP sector?” (60 min), moderation Regional Centre of SHP Abuja 3 to 4 working groups of maximum 20 persons
15:30		Snack break
16:00	11	Short presentation of results from group work in plenary (4 x 5 min)
LESSONS LEARNED FROM RWANDA		
16:30	12	Presentation of GIZ experience with small-scale hydropower in East Africa (30 min), Benjamin Attigah, GIZ
17:00	13	Questions and answers (15 min)
17:15	14	Wrap up of the day
17:30		End of Day

Day Two: 17 April 2012		
Capacity Building Workshop on SHP Project Development		
Location: Golden Gate Hotel, Monrovia / Liberia		
Time	Session	
8:30	1	Introduction
POLICY AND LEGAL ISSUES		
8:45	2	Policy and legal framework (30 min), Martin Bölli, workshop instructor Policy objectives: steering mechanisms; examples; Legal requirements: licences, water right, permits, etc.
9:15	3	Questions and answers (15 min)
9:30	4	Options for ownership and management structures; social and environmental impact (30 min), Shafat Sultan Marazi / TERI Different options of “ownership” (utility, community, district...) and respective consequences; etc.; environmental and social impact; “residual flow”; multipurpose use of rivers;
10:00	5	Questions and answers (15 min)
10:15		Tea/coffee/cocoa break



IMPORTANCE OF RESOURCE ASSESSMENT		
10:45	6	<p>Assessment of hydropower resources (30 min), Oliver Froend</p> <p>Importance of resource assessment and data collection (potential supply and potential demand) for success / profitability; etc.</p>
11:15	7	<p>Questions and answers (15 min)</p>
TOOLS, SUCCESS AND RISK FACTORS		
11:30	8	<p>Project cycle and planning tools (15 min), Oliver Froend</p> <p>How a project cycle for a kW- and a MW-system looks like; for which purpose can planning tools be used for (RETscreen, Homer, etc.)</p>
11:45	9	<p>Assessment of micro hydro potential in selected countries in Africa (including Mali; Benin and Togo); (15 min), M'Gbra N'Guessan, Econoler</p>
12:00	10	<p>Questions and answers (15 -30 min)</p>
12:30		<p>Lunch break</p>
13.50	11	<p>UNIDO Film: Mutobo MHP plant (200 kW), Rwanda, 5 min</p>
14:00	12	<p>General success and risk factors (30 min), Drona Upadhyay, IT Power</p> <p>Analysis of technical, financial, legal, organizational etc. factors having an impact on success or failure of a project</p>
14:30	13	<p>Questions and discussion (15 min)</p>
FINANCING OF SHP		
14:45	14	<p>Profitability calculation and financing model for SHP (30 min), Michael Sponring, PWC Austria</p> <p>Explanations on: crucial financial aspects, calculation of profitability and impact of different parameters on profitability (load factor, investment and O&M costs, tariff, CERs, etc.); comparison with diesel systems</p>
15:15	15	<p>Questions and answers (15 min)</p>
15:30		<p>Snack break</p>
16:00	16	<p>Energy market, stakeholders and operating models in Austria (30 min), Michael Sponring, PWC Austria</p> <p>Private and public ownership;</p>
16:30	17	<p>Questions and answers (15 min)</p>



16:45	18	Financing instruments and experience from African Development Bank (30 min) , Richard Claudet, AfDB Short presentation of the 2 branches of AfDB: “private financing” and “sovereign/public lending”; different financing instruments; relevant aspects when preparing a “project pipeline”; presentation of a generic example; possibilities of bundling smaller projects
17:15	19	Questions and answers (15 min)
17:30		End of Day

Day Three: 18 April 2012				
Capacity Building Workshop on SHP Project Development				
Location: Golden Gate Hotel, Monrovia / Liberia				
Time	Session			
SPECIFIC ECOWAS PRESENTATIONS				
08:30	1	Introduction, ECREEE and Hedi Feibel, workshop consultant		
8:45	2	Experience of the UNIDO Regional Centre for Small Hydro Power Abuja I, 30 min, Dr. Esan		
9:15	3	Question and answers (15 min)		
9:30	4	Experience of the UNIDO Regional Centre for Small Hydro Power Abuja II, 30 min, Dr. Esan		
10:00	5	Question and answers (15 min)		
10:15		Tea/coffee/cocoa break		
10:45 Working groups	6	Parallel sessions of ECOWAS presentations (focus on best practices and lessons learned!); 20 min presentation and 20 min discussion; moderation by ECREEE and the UNIDO Regional Centre of SHP Abuja		
		Presentation 1	Presentation 3	Presentation 5
11:30	7	Presentation 2	Presentation 4	Presentation 6
12:15	8	Plenary: 5 min presentation of lessons learned from the presentations		
12:30		Lunch break		
14:00	9	Excursion to a 4 MW hydropower plant (Firestone Rubber Plantation Company)		
18:00		End of Day		



Day Four: 19 April 2012

Workshop on the ECOWAS Up-Scale Programme for Small-Scale Hydropower

Location: Golden Gate Hotel, Monrovia / Liberia

Time	Session	Moderation by ECREEE and the UNIDO Regional Centre of SHP Abuja		
08:30	1	Hydropower Scenarios in the ECOWAS / WAPP, Mahama Kappiah/Martin Lugmayr, ECREEE/UNIDO		
09:00	2	Short introduction on procedure; Presentation Specific Objective 1: <u>“Policy and Regulatory Frameworks”</u> , Hedi Feibel, workshop consultant		
09:30 Working groups	3	Discussion of Objective 1 in small working groups		
		2 subgroups (6-10 persons each) with focus questions 1	2 subgroups (6-10 persons each) with focus questions 1	3 subgroups (6-10 persons each) with focus questions 1
10:30 Working groups	4	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 1a	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 1b	Exchange of ideas between 3 subgroups and bundling of results → preparation of presentation 1c
		11:00		
11:30	5	Presentation of the working group results 1a, 1b, 1c (10 min each)		
12:00	6	Presentation Specific Objective 2: <u>“Capacity Building”</u> , Jansénio Delgado, ECREEE		
12:30				Lunch break
14:00 Working groups	7	Discussion of Objective 2 in small working groups		
		2 subgroups (6-10 persons each) with focus questions 2	2 subgroups (6-10 persons each) with focus questions 2	3 subgroups (6-10 persons each) with focus questions 2
15:00 Working groups	8	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 2a	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 2b	Exchange of ideas between 3 subgroups and bundling of results → preparation of presentation 2c
		15:30		
16:00				Snack break
16:30	10	Presentation Specific Objective 3: <u>“Knowledge Management & Awareness Raising”</u> , Martin Lugmayr, ECREEE		
17:00				End of Day



Day Five: 20 April 2012

Workshop on the ECOWAS UP-Scale Programme for Small-Scale Hydropower

Location: Golden Gate Hotel, Monrovia / Liberia

Time	Session	Moderation by ECREEE and UNIDO Regional Centre of SHP Abuja		
08:30	1	Short introduction		
08:45 Working groups	2	Discussion of Objective 3 in small working groups		
		2 subgroups (6-10 persons each) with focus questions 3	2 subgroups (6-10 persons each) with focus questions 3	3 subgroups (6-10 persons each) with focus questions 3
09:45 Working groups	3	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 3a	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 3b	Exchange of ideas between 3 subgroups and bundling of results → preparation of presentation 3c
10:15		Tea/coffee/cocoa break		
10:45	4	Presentation of the working group results 3a, 3b, 3c (10 min each)		
11:15	5	Presentation Specific Objective 4: “ <u>Business and Investment Promotion</u> ”, Aminata Fall, ECREEE		
11:45 Working groups	6	Discussion of Objective 4 in small working groups		
		2 subgroups (6-10 persons each) with focus questions 4	2 subgroups (6-10 persons each) with focus questions 4	3 subgroups (6-10 persons each) with focus questions 4
12:30		Lunch break		
14:00 Working groups	7	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 4a	Exchange of ideas between 2 subgroups and bundling of results → preparation of presentation 4b	Exchange of ideas between 3 subgroups and bundling of results → preparation of presentation 4c
14:30	8	Presentation of the working group results 4a, 4b, 4c (10 min each)		
15:00		Snack break		
15:30	9	Final discussion of the results, presentation of the final draft for approval by the participants		
17:00		End of Day		