The Republic of Kenya Rural Electrification Authority

The Project for Establishment of Rural Electrification Model Using Renewable Energy in the Republic of Kenya

Project Completion Report Volume 2 Attachment 1/2

March 2015

Japan International Cooperation Agency (JICA)







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appendix 1 PDM Version 1.0 Date:2012/05/10

 Project Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy

 Implementing Agency: Rural Electrification Authority (REA) and Ministry of Energy (MoEn)

 Target Group: [Direct beneficiaries]

 Staff of REA and MoEn, Staff of MoEd, MoPHS and MoI, District Education/Medical/Business development

 Officers in pilot project sites, Staff and users of public facilities of pilot projects, Private businesses in pilot

 [In-direct beneficiaries] Local PV suppliers and technicians, power users in rural areas Project Site: Kenya (Pilot project sites to be identified and confirmed)

Project Period: 2012-

2015 (3 years)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Overall Goal: Rural electrification models using renewable energy are disseminated in the country to improve the quality of Kenyan's life.	 Number of applied public facilities and business/industrial facilities using developed renewable energy models by the Project. Expenditure on lighting is decreased in target public facilities of the Project. Increase number of mobile phone charging in target public facilities of the Project Increase profitability of the business/industrial in target facilities of the Project Users satisfaction on energy use is increased in target facilities (and communities) of the Project. Guidelines and manuals to practice models for rural electrification 	 Official reports of MoEn/REA Financial management reports of the target facilities. O&M records of the target facilities User survey Household survey Project reports 	There will be no drastic policy change in rural electrification in Kenya. Recommendations are adopted by relevant organizations. REMP is regularly
Rural electrification models using renewable energy are established.	 using renewable energy are adopted for implementation by the REA and MoEn Recommendations to improve policies and institutional frameworks to promote the models are made to relevant organizations. The Outputs of the Project are incorporated into the Rural Electrification Master Plan (REMP) Renewable energy facilities installed by the Project are operated and maintained properly 	 Periodical monitoring reports prepared by the monitoring team Reports on REMP 	updated.
I. A practical model for PV electrification of health service institutions in non-electrified areas is developed through pilot projects.	 1-1. Target benefits of consumer/users" are achieved at health service institutions of the pilot projects. 1-2. In target health institutions and community, 12 awareness raising activities are conducted in 5 sites. 1-3. In total 45 engineers of related ministries and agencies shall be given training by the Project. 1-4. In target health institutions, at least 3 staff have accurate understanding and able to conduct proper O&M of PV facilities. 1-5. The O&M activities are properly recorded. 1-6. Accounting (fee collection and cash management) are properly operated and recorded; 1-7. The O&M reports are made available for the monitoring team. 1-8. Financial reports are regularly submitted to District Medical Officer(s) of the project sites. 	 <u>Target benefits of</u> <u>consumer/users*</u> need to be identified by baseline surveys and stakeholders meetings in order to set indicators. Project reports; Periodical monitoring reports prepared by the monitoring team Records of institutions Reports to District Medical Officer(s); Questionnaire survey 	Cooperation with related ministries, agencies and local governments is maintained.
2. A practical model for PV electrification of schools in non- electrified areas is developed through pilot projects.	 2-1. Target benefits of consumer/users* are achieved at schools of the pilot projects; 2-2. In target school and community, 12 awareness raising activities are conducted in 5 sites. 2-3. In total 45 engineers of related ministries and agencies shall be given training by the Project. 2-4. In target school, at least 3 staff have accurate understanding and able to conduct proper O&M of PV facilities. 2-5. The O & M activities are properly recorded; 2-6. Accounting (fee collection and cash management) are properly operated and recorded; 2-7. The O&M reports are made available for the monitoring team. 2-8. Financial reports are regularly submitted to District Education Officer(s) of the project sites. 	 Project reports; Periodical monitoring reports prepared by the monitoring team Records of institutions Reports to District Education Officer(s); Questionnaire survey 	
3. A practical model for the electrification of business/Industrial facilities using renewable energy is developed through pilot projects.	 3-1. Target benefits of consumer/users* are achieved at facilities of the pilot projects 3-2. In target business/industry and community, 6 awareness raising activities are conducted in 3 sites. 3-3. In total 45 engineers of related ministries and agencies shall be given training by the Project. 3-4. In target business/industry, at least 3 staff have accurate understanding and able to conduct proper O&M of PV facilities. 3-5. The O&M activities are properly recorded; 3-6. Accounting (fee collection and cash management) are properly operated and recorded; 3-7. The O&M reports are made available for the monitoring team. 3-8. The O&M reports and financial reports are regularly submitted to District Officer(s) of the project sites and to the monitoring team of the Project; 	 Project reports; Periodical monitoring reports prepared by the monitoring team Records of institutions Reports to District Officer(s); Questionnaire survey 	
4. Necessary policy and institutional frameworks for spreading the models for rural electrification using renewable energy are recommended.	 4-1. International workshop with other 6 East African Countries is organized. 4-2. Recommendations to improve policies and institutional frameworks necessary for dissemination of rural electrification models are compiled. 4-3. Guidelines and manuals to exercise public model(s) and business model are formulated. 	 Project reports, Periodical monitoring reports prepared by the monitoring team; 	

Activities:	Inputs (Means and Cost)	
 0-1. Set up a Working Group (WG) consisting with clarified roles and functions of the counterpart personnel. 0-2 Finalize the provisional version of PDM and PO of the Project by JCC 	Japanese Side	MOE and REA continue to be responsible for rural electrification in
U-2. Finalize the provisional version of PDM and PO of the Project by JCC.	A. Dispatch of Experts < Short-term Experts>	Kenya.
 1-1. Review policies, studies, surveys and projects related to PV electrification of health service institutions. 	Team leader / Wind power generation Such leader / Dural	(MOPHS, MOE, MOI).agencies and local
1-2. Clarify components of "System design," "Sustainable O&M" and "Sustainable financial plan" to constitute dispensary model(s).	Sub leader / Rural electrification / Micro- hydro power	governments take part in the Project actively.
 1-3. Select 3 health institutions for 1st phase pilot projects. 1-4. Organize stakeholders meetings at the 1st phase pilot project sites including community leaders and the private sector for information sharing and exploring the possibility to find capable private businesses to join the Project as users or service providers. 	 Photovoltaic power generation Biomass/gas power generation Einancial management 	Target communities, institutions, and private sectors agree the Project Purpose and
1-5. Conduct baseline survey(s) on target communities, institutions and the private sectors of the 1 st phase pilot project sites.	 Socio-economic survey and community 	take part in the Project actively.
 1-6. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services. 1-7. Conduct capacity & needs assessment of officers in relevant ministries, agencies 	 mobilization Development of local industry and business skill training / Project 	take longer than planned.
and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters.	coordinator / Support of procurement and	Security is maintained
consideration for rural electrification projects using PV. <pp 1="" phase=""></pp>	 Procurement and supervision of pilot 	Pre-conditions
1-9. Prepare detailed plans of the 1 st phase pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan."	 projects Environmental and Social 	Related ministries
 1-10. Organize stakeholders meetings to verify the detailed plans. 1-11. Formulate the implementation plans of the 1st phase pilot projects, including procurement, information & knowledge dissemination, and stakeholders' training. 	B. Training of Kenyan	(MOPHS, MOE, MOI), agencies and local governments agree the
 1-12. Implement and monitor the projects' activities. 1-13. Compile the results of the 1st phase pilot projects including benefits for users and communities 	 bersonnel (in Japan, in the third country) Counterpart Training, and/or 	Project Purpose and accept their roles in the Project implementation.
1-14. Conduct awareness raising activities for 1 st phase pilot projects, 3 times at 3 sites. <i><pp 2="" phase=""></pp></i>	Group Training Course for Rural Electrification by	
1-15. Examine lessons learnt from the 1 st phase projects.	Renewable Energy	
 1-16. Select 2 health institutions for 1st phase pilot projects 1-17. Organize stakeholders meetings at the 2nd phase pilot project sites including community leaders and the private sector for information sharing and exploring the possibility to find capable private businesses to join the Project as users or service providers. 	 C. Provision of Equipment. Equipment for pilot projects of health service 	Counterpart, budget, office space and facilities necessary for the Project are allocated
1-18. Conduct baseline survey(s) on target communities, institutions and the private sectors of the 2 nd phase pilot project sites.	 Institutions Equipment for pilot 	
1-19. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services.	 Equipment for pilot projects of industrial development 	
1-20. Prepare detailed plans of the 2 nd phase pilot projects.	Other equipment will be	
1-22. Formulate the implementation plans	specified depending on the	
1-23. Implement and monitor the projects' activities.	implementation of the Project.	
1-24. Conduct awareness raising activities for 2 nd phase pilot projects, 2 times at 2 sites. 1-25. Compile the results and lessons learnt of the 2 nd phase pilot projects including	D. Local Cost	
 1-26. Examine the components of health institution model(s) to formulate guidelines and manuals on the model(s). 	trainings, local and international consultants, etc.)	
1-27. Prepare policy recommendations with institutional framework to promote the health institution model(s).	Kenyan Side:	
1-28. Monitor and report the progress of indicators to achieve Output 1.	personnel B. Provision of office space	
2-1. Review policies, studies, surveys and projects related to PV electrification of schools	and tacilities at REA (office for JICA experts and Working group members)	
2-2. Clarify components of "System design," "Sustainable O&M" and "Sustainable financial plan" to constitute school model(s).	C. Allocation of counterpart budget	
2-3. Select 2 schools for 1 st phase pilot projects.		
2-4. Organize stakeholders meetings at the 1st phase pilot project sites including community leaders and the private sector for information sharing and exploring the possibility to find capable private businesses to join the Project as users or service providers.		
2-5. Conduct baseline survey(s) on target communities, institutions and the private sectors of the 1 st phase pilot project site		
 2-6. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services. 		
2-7. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters.		
 2-8. Apply for procedures of Environmental and Social Considerations including gender consideration for rural electrification projects using PV. PP Phase 1> 		
	1	1

2-9 to 2-13: Same as activities for Output 1: 1-9 to 1-13 (please replace "health service institutions" with "schools")	
2-14. Conduct awareness raising activities for 1 st phase, 3 times x 2 sites.	
<pp 2="" phase=""></pp>	
2-15. Examine lessons learnt from the 1° phase projects.	
2-17 to 2-23: Same as activities for Output 1: 1-17 to 1-23 (please replace "health service	
institutions" with "schools")	
2-24. Conduct awareness raising activities for 2 ⁻¹ phase, 2 times at 3 sites.	
institutions" with "schools")	
For Output 3 (Business/industry model)	
3-1. Review policies, studies, surveys and projects related to utilization of renewable energy use for rural (village scale) business/industrial development.	
3-2. Establish site selection criteria and procedures	
3-3. Select candidate sites for pilot projects (Biogas, Micro-Hydro and Wind).	
Wind).	
3-5. Clarify major components of "System design," "Sustainable O&M" and "Sustainable financial plan" to constitute business/industry model(s).	
3-6. Organize stakeholders meetings at candidate sites including community leaders and the private sector to explore the possibility of finding capable association(s) of private businesses to join the Project as users or service providers.	
3-7. Conduct baseline survey(s) on target communities, institutions and the private sectors of pilot project sites.	
3-8. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services.	
3-9. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters.	
3-10. Apply for procedures of Environmental and Social Considerations including gender consideration for rural electrification projects using renewable energy.	
3-11. Prepare detailed plans of the pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan."	
3-12. Organize stakeholders meetings to verify the detailed plans	
3-13. Formulate the implementation plans, including procurement, information & knowledge dissemination, and stakeholders' training.	
3-14. Implement and monitor the projects' activities.	
3-15. Compile the results and lessons learnt of the pilot projects including benefits for users and communities	
3-16. Examine the components of business/industry model(s) to formulate guidelines and manuals on the model(s).	
3-17. Prepare policy recommendations with institutional framework to promote the business/industry model(s).	
3-18. Monitor and report the progress of indicators to achieve Output 3.	
3- 19. Conduct awareness raising activities for business / industry, 2 times at 3 sites.	
For Output 4 (Policy recommendations)	
4-1. Implement and monitor the preparation activities of policy recommendations: 1-27, 2-27, and 3-17.	
4-2. Organize workshop on rural electrification models using renewable energy for information sharing with other stakeholders and donors in the energy sector of Kenya and East Africa.	
4-3. Conduct a training for 45 engineers of related ministries and agencies by the Project.	
4-4. Compile the policy recommendations.4-5. Monitor and report the progress of indicators to achieve Output 4.	

appendix 1 PDM Version 1.4 Date:2012/11/24

Project Title: <u>The Project for Establishment of Rural Electrification Model Using Renewable Energy</u> Implementing Agency: Rural Electrification Authority (REA) and Ministry of Energy (MoEn) Target Group: [Direct beneficiaries] Staff of REA and MoEn, Staff of MoEd, MoPHS, District Education/Medical Officers in pilot project sites, Staff and users of public facilities of pilot projects in pilot project sites, other stakeholders to be confirmed [In-direct beneficiaries] Local PV suppliers and technicians, power users in rural areas Project Sites (Chilet project sites to be identified and confirmed)

Project Site: Kenya (Pilot project sites to be identified and confirmed) **Project Period:** 2012–2015 (3 years)

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF	IMPORTANT
SUMMARY		VERIFICATION	ASSUMPTIONS
Overall Goal:		Official reports of	There will be no
Rural electrification	• Number of public facilities who apply and follow the model has	MoEn/REA	drastic policy change
models using renewable	increased all over the non-electrified areas in Kenya.	• Financial management	in Fural electrification
energy are disseminated		feailities	III Keliya.
in the country to		0 $ 0 $ $ M $ records of the	Recommendations are
improve the quality of		target facilities	adopted by relevant
Kenvan's life.		User survey	organizations.
		 Household survey 	C
Project Purpose	1 The developed guidelines and manuals are adopted for the projects		REMP is regularly
Rural electrification	implemented by the REA and MoEn		updated.
models using renewable	2. The Outputs of the Project are incorporated into the Rural Electrification		-
energy are established	Master Plan (REMP)		
	3 Renewable energy facilities installed by the Project are operated and		
	maintained properly with sustainable manners.		
Outputs:	1-1. Target benefits of consumer/users are achieved at health service	Project reports:	Cooperation with
1 A practical model for	institutions of the pilot projects.	 Records of institutions 	related ministries,
PV electrification of	- The quality of night health service is improved by judgment of nurses and	Periodical monitoring	agencies and local
health service	community people.	report prepared by the	governments is
institutions in non-	- The expenditure for kerosene and LPG gas of the health institutions	monitoring team	maintained.
electrified areas is	decrease by X %.(X will be fixed after cost calculation)	Reports to District	
developed through	- The target health institutions receive revenue from power provision	Medical Officer(s);	
nilot projects	service.	• Questionnaire survey	
phot projects.	- The target health institutions feel satisfaction with the electrification.		
	- The number of households who charge up their LED lantern using the		
	power provision service of the dispensary is up to Y (Y will be fixed after		
	detailed interview)		
	- The inhabitants in surrounding community feel satisfaction with the		
	electrification of the dispensary in general		
	1-2. Number of awareness raising activities on installed solar PV system at		
	target health institutions and community, at least 3 times for each Lot 1		
	sites and 2 times for Lot 2 sites.		
	1-3. Number of trained staff in target health institution. At least 3 staff have		
	accurate understanding and able to conduct proper O&M of PV facilities.		
	1-4. Number of periodical monitoring carried out by the monitoring team		
	1-5 Condition of management by health service institutions		
	- Maintenance condition of nilot facilities and quality of O&M report		
	- Condition of balance sheet of pilot institutions and quality of account		
	book		
	1-6. Number of financial reports which submitted to District Medical		
	Officer(s) of the project sites.		
2. A practical model for	2-1. Target benefits of consumer/users are achieved at schools of the pilot	 Project reports; 	
PV electrification of	projects.	 Records of institutions 	
schools in non-	- The quality of education is improved by judgment of teacher and students.	Periodical monitoring	
electrified areas is	- The expenditure for kerosene and LPG gas of the schools decrease by	report prepared by the	
developed through	X %. (X will be fixed after cost calculation)	Reports to District	
pilot projects.	- The target schools receive revenue from power provision service.	Education Officer(s).	
	- The target schools feel satisfaction with the electrification.	 Ouestionnaire survey 	
	- The number of households who charge up their LED lantern using the		
	power provision service of the dispensary is up to Y. (Y will be fixed after		
	detailed interview).		
	- The inhabitants in surrounding community feel satisfaction with the		
	electrification of the school in general.		
	2-2. Number of awareness raising activities on installed solar PV system at		
	target school and community, at least 3 times for each Lot 1 sites and 2		
	1 HILES IOI LOI 2 SILES.		
	2-5. Number of trained start in target school. At least 5 start have accurate understanding and able to conduct proper O&M of PV facilities		
	2-4. Number of periodical monitoring carried out by the monitoring team		
	which formulated by counterpart agencies.		
	2-5. Condition of management by schools.		
	- Maintenance condition of pilot facilities and quality of O&M report		
	- Condition of balance sheet of pilot facilities and quality of account book		
	2-6. Number of financial reports which submitted to District Education		
	Oncer(s) of the project sites.		
	2.1 The model of the DEA (M.E. 11. 1.1.		•
3. The Capacity of REA	5-1. I ne number of trained staff of REA / MoEn on renewable energy through	Periodical monitoring report prepared by the	
/ MoEn to undertake	Inanual development works.	monitoring team	
project using MHP,	recognize and are able to use the manuals		
Biogas and Wind	3-3. The number of conducted technical transfer training and cominer		
technologies is	5-5. The number of conducted technical transfer training and semiliar.		

enhanced.	3-4. The number of technical recommendation for rural electrification using MHP, Biogas and Wind.		
4. Necessary policy and institutional frameworks for spreading the models for rural electrification using renewable energy are recommended.	 4-1. Number of international workshop to share the model is held more than one (EAC conference). 4-2. Number of technical transfer workshop given for engineers of MoEn and REA is held more than one. 4-3. Number of recommendation that MoEn and REA make for the effective dissemination of RE is more than XX during the pilot project period. 4-4. The number of the policies and regulations has increased to support the dissemination of the model. 	 Project reports, Periodical monitoring reports prepared by the monitoring team; 	

Activities: For Preparation 0-1. Set up a Working Group (WG) consisting of 3 sub-groups for Outputs 1, 2 and 3, with classified actes and functions of the counterpart account.	Inputs (Means and Cost) Japanese Side	MOE and REA continue to be responsible for rural electrification in Kenya.
 For Output 1 (The health service institution model) 1-1. Review policies, studies, surveys and projects related to electrification of health service institutions using Solar PV. 1-2. Select 5 health institutions for pilot projects. 1-3. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services. 1-4. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters. 1-5. Prepare detailed plans of the pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan." 1-6. Organize stakeholders meetings to verify the detailed plans. 1-7. Formulate the implementation plans of the pilot projects, including procurement, information & knowledge dissemination. and stakeholders' training. 	 A. Dispatch of Experts Short-term Experts> Team leader / Wind power generation Sub leader / Rural electrification / Micro-hydro power Photovoltaic power generation Biomass/gas power generation Financial management Socio-economic survey and community mobilization Procurement and supervision 	Related ministries (MOPHS, MOE, MOI),agencies and local governments take part in the Project actively. Target communities, institutions, and private sectors agree the Project Purpose and take part in the Project actively. EIA procedures do not take longer than planned. Security is maintained
 1-8. Implement and monitor the projects' activities, and prepare policy recommendations with institutional framework to promote the health institution model(s). 1-9. Monitor and report the progress of indicators to achieve Output 1 	 Environmental and Social Considerations 	Pre-conditions
 For Output 2 (School model) 2-1. Review policies, studies, surveys and projects related to electrification of schools using Solar PV. 2-2. Select 5 school sites for pilot projects. 2-3. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services. 	 B. Training of Kenyan personnel (in Japan, in the third country) Counterpart Training, and/or Group Training Course for Rural Electrification by Renewable Energy 	Related ministries (MOPHS, MOE, MOI), agencies and local governments agree the Project Purpose and accept their roles in the Project implementation.
 2-4. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters. 2-5. Prepare detailed plans of the pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan." 2-6. Organize stakeholders meetings to verify the detailed plans. 2-7. Formulate the implementation plans of the pilot projects, including procurement, information & knowledge dissemination, and stakeholders' training. 2-8. Implement and monitor the projects' activities, and prepare policy recommendations with institutional framework to promote the school model(s). 2-9. Monitor and report the progress of indicators to achieve Output 2. 	 C. Provision of Equipment. Equipment for pilot projects of health service institutions Equipment for pilot projects of schools Equipment for pilot projects of industrial development Other equipment will be specified depending on the requirement for effective implementation of the Project. 	Counterpart, budget, office space and facilities necessary for the Project are allocated
 For Output 3 (MHP, Biogas and Wind) 3-1. Conduct inventory survey and review of existing renewable energy project (MHP, Biogas, Wind). 3-2. Prepare manuals for rural electrification using renewable energy (MHP, Biogas, Wind) 3-3. Conduct technical training for REA / MoEn staff on MHP, Biogas and Wind. 3-4. Prepare technical recommendation for rural electrification using MHP, Biogas and Wind. 	D. Local Cost (Seminars, meetings, trainings, local and international consultants, etc.) <u>Kenyan Side:</u>	

For Output 4 (Policy recommendations)	A. Assignment of counterpart
 4-1. Implement and monitor the preparation activities of policy recommendations of Output 1,2 and 3. 4-2. Organize workshop(s) on rural electrification models using renewable energy for information sharing with other stakeholders and donors in the energy sector of Kenya and East Africa. 4-3. Formulate guidelines and manuals for the components of the health facilities and schools. 	personnel B. Provision of office space and facilities at REA (office for JICA experts and Working group members.) C. Allocation of counterpart budget
4-4. Initiate and strengthen the concept of Academic-Private Sector Platform in	
collaboration with JICA Experts of "the Project for Capacity Development for Promoting	
Rural Electrification Using Renewable Energy."	
4-5 Monitor and report the progress of indicators to achieve Output 4	

A1-5

appendix 1 PDM Version 2.1 Date:2012/12/01

Project Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy

Implementing Agency: Rural Electrification Authority (REA) and Ministry of Energy (MoEn)

 Target Group: [Direct beneficiaries]
 Staff of REA and MoEn, Staff of MoEd, MoPHS, District Education/Medical Officers in pilot project sites, Staff and users of public facilities of pilot projects in pilot project sites, other stakeholders to be confirmed

[In-direct beneficiaries] Local PV suppliers and technicians, power users in rural areas

Project Site: Kenya (Pilot project sites to be identified and confirmed) **Project Period:** 2012–2015 (3 years)

OBJECTIVELY VERIFIABLE INDICATORS NARRATIVE **MEANS OF IMPORTANT SUMMARY** VERIFICATION ASSUMPTIONS Official reports of There will be no **Overall Goal:** Number of public facilities who apply and follow the model has MoEn/REÂ drastic policy change Rural electrification in rural electrification increased all over the non-electrified areas in Kenya. Financial management models using renewable reports of the target in Kenya. energy are disseminated facilities. in the country to O&M records of the Recommendations are improve the quality of adopted by relevant target facilities organizations. Kenyan's life. User survey Household survey REMP is regularly Project Purpose: 1. The developed guidelines and manuals are adopted for the projects updated. Rural electrification implemented by the REA and MoEn. 2. The Outputs of the Project are incorporated into the Rural Electrification models using renewable Master Plan (REMP) energy are established 3. Renewable energy facilities installed by the Project are operated and maintained properly with sustainable manners. 1-1. Target benefits of consumer/users are achieved at health service **Outputs:** • Project reports; Cooperation with related ministries. institutions of the pilot projects. • Records of institutions l. A practical model for agencies and local - The quality of night health service is improved by judgment of nurses and Periodical monitoring PV electrification of governments is report prepared by the community people. health service maintained. monitoring team - The expenditure for kerosene and LPG gas of the health institutions institutions in non-Reports to District decrease by X %.(X will be fixed after cost calculation) electrified areas is Medical Officer(s); - The target health institutions receive revenue from power provision developed through • Questionnaire survey service. pilot projects. - The target health institutions feel satisfaction with the electrification. - The number of households who charge up their LED lantern using the power provision service of the dispensary is up to Y. (Y will be fixed after detailed interview). - The inhabitants in surrounding community feel satisfaction with the electrification of the dispensary in general. 1-2. Number of awareness raising activities on installed solar PV system at target health institutions and community, at least 3 times for each Lot 1 sites and 2 times for Lot 2 sites. 1-3. Number of trained staff in target health institution. At least 3 staff have accurate understanding and able to conduct proper O&M of PV facilities. 1-4. Number of periodical monitoring carried out by the monitoring team which formulated by counterpart agencies. 1-5. Condition of management by health service institutions. - Maintenance condition of pilot facilities and quality of O&M report - Condition of balance sheet of pilot institutions and quality of account book 1-6. Number of financial reports which submitted to District Medical Officer(s) of the project sites. 2. A practical model for 2-1. Target benefits of consumer/users are achieved at schools of the pilot • Project reports; PV electrification of projects. Records of institutions - The quality of education is improved by judgment of teacher and students. Periodical monitoring schools in nonreport prepared by the - The expenditure for kerosene and LPG gas of the schools decrease by electrified areas is monitoring team X %. (X will be fixed after cost calculation) developed through Reports to District - The target schools receive revenue from power provision service. pilot projects. Education Officer(s); - The target schools feel satisfaction with the electrification. Questionnaire survey - The number of households who charge up their LED lantern using the power provision service of the dispensary is up to Y. (Y will be fixed after detailed interview). - The inhabitants in surrounding community feel satisfaction with the electrification of the school in general.

	 2-2. Number of awareness raising activities on installed solar PV system at target school and community, at least 3 times for each Lot 1 sites and 2 times for Lot 2 sites. 2-3. Number of trained staff in target school. At least 3 staff have accurate understanding and able to conduct proper O&M of PV facilities. 2-4. Number of periodical monitoring carried out by the monitoring team which formulated by counterpart agencies. 2-5. Condition of management by schools. Maintenance condition of pilot facilities and quality of O&M report Condition of balance sheet of pilot facilities and quality of account book 2-6. Number of financial reports which submitted to District Education Officer(s) of the project sites. 		
3. The Capacity of REA / MoEn to undertake project using MHP, Biogas and Wind technologies is	 3-1. Number of trained REA / MoEn staff on renewable energy through manual development. 3-2. Manuals are adopted and utilized by related ministries, agencies and local governments. 3-3. Number of conducted seminar and training for technical transfer. 	Periodical monitoring report prepared by the monitoring team	

enhanced.			
4. Necessary policy and institutional frameworks for spreading the models for rural electrification using renewable energy are recommended.	 4-1. Number of international workshop to share the model is held more than one (EAC conference). 4-2. Number of technical transfer workshop given for engineers of MoEn and REA is held more than one. 4-3. Number of recommendation that MoEn and REA make for the effective dissemination of RE is more than XX during the pilot project period. 4-4. The number of the policies and regulations has increased to support the dissemination of the model. 	 Project reports, Periodical monitoring reports prepared by the monitoring team; 	

Activities:	Inputs (Means and Cost)	MOE and REA continue to
For Preparation 0-1 Set up a Working Group (WG) consisting of 3 sub-groups for Outputs 1, 2 and 3	Jananese Side	electrification in Kenya.
with clarified roles and functions of the counterpart personnel.	<u>Supariese Side</u>	
 For Output 1 (The health service institution model) 1-1. Review policies, studies, surveys and projects related to electrification of health service institutions using Solar PV. 1-2. Select 5 health institutions for pilot projects. 1-3. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services. 1-4. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters. 1-5. Prepare detailed plans of the pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan." 1-6. Organize stakeholders meetings to verify the detailed plans. 1-7. Formulate the implementation plans of the pilot projects, including procurement, information & knowledge dissemination and stakeholders' training 	 A. Dispatch of Experts Short-term Experts> Team leader / Wind power generation Sub leader / Rural electrification / Micro-hydro power Photovoltaic power generation Biomass/gas power generation Financial management Socio-economic survey and community mobilization Procurement and supervision 	Related ministries (MOPHS, MOE, MOI),agencies and local governments take part in the Project actively. Target communities, institutions, and private sectors agree the Project Purpose and take part in the Project actively. EIA procedures do not take longer than planned. Security is maintained
1-8. Implement and monitor the projects' activities, and prepare policy recommendations with institutional framework to promote the health institution model(s).	 Of pilot projects Environmental and Social Considerations 	Pre-conditions
 For Output 2 (School model) 2-1. Review policies, studies, surveys and projects related to electrification of schools using Solar PV. 2-2. Select 5 school sites for pilot projects. 2-3. Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy surply services. 	 B. Training of Kenyan personnel (in Japan, in the third country) Counterpart Training, and/or Group Training Course for Rural Electrification by Renewable Energy 	Related ministries (MOPHS, MOE, MOI), agencies and local governments agree the Project Purpose and accept their roles in the Project implementation.
 2-4. Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of communities, users, and service providers on renewable energy matters. 2-5. Prepare detailed plans of the pilot projects consisting of "System design," "Sustainable O&M" and "Sustainable financial plan." 2-6. Organize stakeholders meetings to verify the detailed plans. 2-7. Formulate the implementation plans of the pilot projects, including procurement, information & knowledge dissemination, and stakeholders' training. 2-8. Implement and monitor the projects' activities, and prepare policy recommendations with institutional framework to promote the school model(s). 2-9. Monitor and report the progress of indicators to achieve Output 2. 	 C. Provision of Equipment. Equipment for pilot projects of health service institutions Equipment for pilot projects of schools Equipment for pilot projects of industrial development Other equipment will be specified depending on the requirement for effective implementation of the Project. 	Counterpart, budget, office space and facilities necessary for the Project are allocated
 For Output 3 (MHP, Biogas and Wind) 3-1. Conduct inventory survey and review of existing renewable energy project (MHP, Biogas, Wind). 3-2. Prepare manuals for rural electrification using renewable energy (MHP, Biogas, Wind) 3-3. Conduct technical training for REA / MoEn staff on MHP, Biogas and Wind. 3-4. Prepare technical recommendation for rural electrification using MHP, Biogas and Wind. 	D. Local Cost (Seminars, meetings, trainings, local and international consultants, etc.)	

	ixenyan blue.
For Output 4 (Policy recommendations)	A. Assignment of counterpart
 4-1. Implement and monitor the preparation activities of policy recommendations of Output 1,2 and 3. 4-2. Organize workshop(s) on rural electrification models using renewable energy for information sharing with other stakeholders and donors in the energy sector of Kenya and East Africa. 4-3. Formulate guidelines and manuals for the components of the health facilities and schools. 	personnel B. Provision of office space and facilities at REA (office for JICA experts and Working group members.) C. Allocation of counterpart budget
4-4. Initiate and strengthen the concept of Academic-Private Sector Platform in	
collaboration with JICA Experts of "the Project for Capacity Development for Promoting	
Rural Electrification Using Renewable Energy."	
4-5 Monitor and report the progress of indicators to achieve Output 4	

appendix 1 PDM Version 3.1 Date:2013/10/15

Project Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy

Implementing Agency: Rural Electrification Authority (REA) and Ministry of Energy and Petroleum (MoE&P)

Target Group: Staff of REA and MoE&P, MoEST, MoH, County/Sub-County Education/Medical Officers in pilot project sites, Members of pilot project school and dispensary management committee, Operators of charging business at pilot project facilities, Local PV suppliers and technicians, Staff and users of public facilities of pilot projects in pilot project sites, power users in rural areas

Project Site: Kijiado Central (1), Narok North (1), Narok South (2), Samburu Central (1), Samburu North (5)

Project Period: 2012–2015 (3 years)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Overall Goal: Rural electrification models using renewable energy are disseminated in the country to improve the quality of Kenyan's life.	 Number of public facilities who apply and follow the model has increased all over the non-electrified areas in Kenya. Dissemination structure of national and county governmental agencies is established. 	Official reports of MoE&P/REA	Promotion measures and policies for rural electrification by renewable energy will be maintained, There will be no major changes in national and county government structures. Recommendations are adopted by relevant organizations.
Project Purpose: Rural electrification models using renewable energy are established	 The developed guidelines and manuals are applied to the projects implemented by the REA and MoE&P (C/P). The Outputs of the Project are incorporated into implementation of REA Annual Renewable Energy Work Programme (Performance Contract). Renewable energy facilities installed by the Project are operated and maintained properly with sustainable. Implementation structures of national/county governmental agencies and local stakeholders are established. Variety of expertise in renewable energy is increased among members of C/P (C/Ps). 	 Financial reports of the target facilities. O&M records of the target facilities User survey Household survey Numbers of expertise of C/Ps 	REA Annual Renewable Energy Work Programme (Performance Contract) are prepared and implemented Involvement of relevant national and county government is maintained.
Outputs: 1. A practical model for PV electrification of health service institutions in non- electrified areas is developed through pilot projects.	 All level O. All level OI All sub-group working members for Output 1 participate in monitoring at least twice as a monitoring team member. OI Monitoring trainings for the monitoring team members including both technical and environmental/community development staff at REA and MoE&P are provided based on their Objective & Achievement Sheet through OJT; On the Job Training. A tleast 3 monitoring team members achieve their objectives through trainings. Achievements are confirmed by trainee's self-assessment and evaluation by Japanese Experts (JEs). O-3 PV electrification, operation and maintenance manual for health service institutions with battery charging business is prepared for C/Ps including user manual and accounting manual. At least 2 people from health institution and management committee as well as the operator of charging center are trained to have accurate understanding and to be able to conduct proper O&M of PV facilities including disposal of solar panels, batteries and toxic materials. National Level Collaboration among relevant governmental agencies is started and maintained at national level to support the establishment and dissemination of the model. Key criteria of the site selection are analyzed and established and sites for Lot 1 and Lot 2 are selected accordingly. County/Sub-county Level Collaboration among C/Ps, County and Sub-county medical officers is initiated and maintained to support the establishment, operation and maintenance of the model. Local/Institutional Level The target health institutions secure the money from battery charging business and other financial source(s) for sufficient maintenance cost such as future purchase of batteries. Periodical monitoring is carried out by the monitoring team at least 3 times for Lot 1 and twice for Lot 2. Satisfaction for the system is 	 Project reports Account book Cash flow statement Financial reports O&M reports Periodical monitoring report prepared by the monitoring team Questionnaire survey Objective & Achievement sheets of monitoring team members PV electrification, operation and maintenance manual for health service institutions Minutes of the meetings with relevant governmental agencies and County/Sub-county Medical officers. 	There will be no major changes in national and county government structures.

	 conformed through monitoring. 3-3. Awareness raising activities on installed solar PV system at target health institutions and community are held at least 3 times for each Lot 1 sites and 2 times for Lot 2 sites. 		
2. A practical model for PV electrification of schools in non- electrified areas is developed through pilot projects.	 All level All level All sub-group working members for Output 1 participate in monitoring at least twice as a monitoring team member. Monitoring trainings for the monitoring team members including both technical and environmental/community development staff at REA and MoE&P are provided based on their Objective & Achievement Sheet through OJT. At least 3 monitoring team members achieve their objectives through trainings. Achievements are confirmed by trainee's self-assessment and evaluation by JEs. PV electrification, operation and maintenance manual for schools with battery charging business is prepared for C/Ps including user manual and accounting manual. At least 3 people from school and management committee as well as the operator of charging center are trained to have accurate understanding and to be able to conduct proper O&M of PV facilities including disposal of solar panels, batteries and toxic materials. National Level Collaboration among relevant governmental agencies is started and maintained at national level to support the establishment and dissemination of the model. Key criteria of the site selection are analyzed and established and sites for Lot 1 and Lot 2 are selected accordingly. County/Sub-county Level Collaboration among C/Ps, County and Sub-county education officers is initiated and maintained to support the establishment, operation and maintenance of the model. Local/Institutional Level The target schools secure the money from battery charging business and other financial source(s) for sufficient maintenance cost such as future purchase of batteries. Periodical monitoring is carried out by the monitoring team at least 3 times for Lot 1 and twice for Lot 2. Satisfaction for the system is conformed through monitoring. A wareness raising activities on installed solar PV system at target	 Project reports Account book Cash flow statement Financial reports O&M reports Periodical monitoring report prepared by the monitoring team Questionnaire survey Objective & Achievement sheets of monitoring team members PV electrification, operation and maintenance manual for schools Minutes of the meetings with relevant governmental agencies and County/Sub-county Education officers. 	
3. The Capacity of REA / MoE&P to undertake project using MHP, Biogas and Wind technologies is enhanced.	 3-1. Training is conducted for at least 2 C/Ps for each renewable energy technology. 3-2. Guidelines are established for each renewable technology (MHP, Biogas and Wind). 3-3. Guidelines are utilized by relevant ministries, governmental agencies and County/Sub-county offices. 3-4. Seminar and training for technical transfer are conducted for C/Ps based on their Objective & Achievement sheets. 3-5. At least 6 C/Ps achieve their objective through training. Achievements are confirmed by trainee's self-assessment and evaluation by JEs. 3-6. At least one pre-feasibility study document for future practical model for MHP, Biogas and Wind is prepared. 	 Prepared Guidelines Project reports Objective & Achievement sheets of trainees at REA and MoE&P 	
4. Necessary policy and institutional frameworks for rural electrification using renewable energy are recommended.	 4-1. International workshop is held to share the results of the project (e.g. EAC conference). 4-2. Technical transfer workshops for C/Ps are held 3 times. 4-3. Recommendations for C/P to implement the effective electrification by renewable energy are provided to be reflected on their rural electrification policy. 	 Project reports Presentation materials for International workshop. Rural electrification policy of REA and MoE&P 	

Activities:	Inputs (Means and Cost)	MoE&P and REA
For Preparation	T C'I	continue to be responsible for rural
1. Set up a Working Group (WG) consisting of 3 sub-groups for Outputs 1, 2 and 3, with clarified roles and functions of the counterpart personnel	Japanese Side	electrification in
Toles and functions of the counterpart personnel.	A. Dispatch of Experts	Kenya.
For all Outputs	< Short-term Experts>	Related ministries
1. A weekly project status report is prepared and shared by both C/Ps and JEs.	• Team leader / Wind	(MoH,
2. Monthly project meeting is held by REA.	power generation	MoEST,), agencies
3. Progress report is prepared by JEs including the progress summary table according to PDM to monitor and report the progress of indicators to achieve outputs	• Sub leader / Rural	and county
monitor and report the progress of indicators to achieve outputs.	hvdro power	governments take part
For Output 1 (The health service institution model)	Photovoltaic power	actively.
1-1 National Level	generation	5
1-1-1 Review policies, studies, surveys and projects related to electrification of health service institutions using Solar PV	Biomass/gas power	Target communities,
1-1-2 Organize a progress and information sharing meetings with REA. MoE&P. and MoH at least	Einancial management	institutions, and
twice to discuss on model establishment and dissemination at national level.	Community	the Project Purpose
1-1-3 Prepare policy recommendations with institutional framework to promote the health institution	Development and	and take part in the
model(s).	Monitoring	Project actively.
1-1-4 Prepare a proposal for the disposal of solar panels, batteries and toxic materials according to the current conditions and regulations	Procurement and	G
the current conditions and regulations.	supervision of pilot	Security is maintained
1-2 County/Sub-county Level	Environmental and	
1-2-1 Account book and cash flow statement are submitted to County Medical Officer(s) of the	Social Considerations	Pre-conditions
project sites at least twice for Lot 1 and once for Lot 2.		
1-2-2 Own reports are submitted to County Medical Officer(s) twice for Lot 1 and once for Lot 2. 1-2-3 Organize a progress and information sharing meetings with REA. MoE&P (monitoring team	B. Training of Kenyan	Related ministries
members), and County and Sub-county medical officers at least twice to discuss on model	third country)	agencies and county
establishment and dissemination at County/Sub-county level.	Counterpart Training	governments agree
1-2-4 Conduct the baseline survey at the target facilities and surrounding communities	and/or	the Project Purpose
1-2-5 Conduct capacity & needs assessment of County/Sub-county medical officers in terms of	Group Training Course	and accept their roles
Tenewable energy utilization and dissemination.	for Rural Electrification	in the Project
1-3 Local/Institutional Level	by Renewable Energy	implementation.
1-3-1 Conduct capacity & needs assessment of target communities and other stakeholders.		
1-3-2 Sustainable financial plan is prepared.	C. Provision of Equipment.	
members of management committee are provided through lectures and OJT.	• Equipment for pilot	
1-3-4 The operator of the charging center accurately records daily sale.	projects of health	Counterpart, budget,
1-3-5 Assigned nurse, a treasurer and a chairperson of the management committee accurately	Equipment for pilot	office space and
records an account book and cash flow statement.	projects of schools	facilities necessary
1-3-6 Assigned nurse and a charperson of the management committee prepare O&M reports.	Other equipment will be	for the Project are
financial support to sustain the model according to the income by battery charging system.	specified depending on the	anocated
1-3-8 Prepare detailed plans of the pilot projects including "System design" and "Sustainable O&M"	requirement for effective	
with staff of REA and MoE&P through OJT.	Project.	
facility to discuss on operation and maintenance at least once for each pilot facility	5	
1-3-10 Organize an information sharing meeting with users of pilot facility and County/Sub-county	D. Local Cost	
medical officer(s) at least once for each pilot facility.	(Seminars, meetings,	
1-3-11 Organize an evaluation meeting with the members of management committee and owners and	international consultants.	
users of facility, County and Sub-county medical officers at the end of the project period at least once for each pilot facility	etc.)	
· · · · · · · · · · · · · · · · · · ·	I Z	
For Output 2 (School model)	A Assignment of	
2-1 National Level	counterpart personnel	
2-1-1 Review policies, studies, surveys and projects related to electrification of schools using Solar	B. Provision of office space	
2-1-2 Organize a progress and information sharing meetings with REA. MoE&P. and MoEST at	and facilities at REA (office	
least twice to discuss on model establishment and dissemination at national level.	Working group members	
2-1-3 Prepare policy recommendations with institutional framework to promote the school model(s).	C. Allocation of counterpart	
2-1-4 Prepare a proposal for the disposal of solar panels, batteries and toxic materials according to the current conditions and regulations	budget	

2-2 County/Sub-county Level 2-2-1 Account book and cash flo

ent are submitted to County Education Officer(s) of th

2-2-1 Account book and cash now statement are submitted to County Education Officer(s) of the	
project sites at least twice for Lot 1 and once for Lot 2.	
2-2-2 O&M reports are submitted to County Education Officer(s) twice for Lot1 and once for Lot 2.	
2-2-3 Organize a progress and information sharing meetings with REA, MoE&P (monitoring team	
members), and County and Sub-county education officers at least twice to discuss on model	
establishment and dissemination at County/Sub-county level.	
2-2-4 Conduct the baseline survey at the target facilities and surrounding communities	
2-2-5 Conduct capacity & needs assessment of County/Sub-county education officers in terms of	
renewable energy utilization.	
2-3 Local/Institutional Level	
2-3-1 Conduct capacity & needs assessment of target communities and stakeholders.	
2-3-2 Sustainable financial plan is prepared.	
2-3-3 Sufficient financial trainings for the operator of charging center, staff of school, and members	
of management committee are provided.	
2-3-4 The operator of the charging center accurately records daily sale.	
2-3-5 Head teacher, a treasurer and a chairperson of the management committee accurately record an	

account book and cash flow statement.	
2-3-6 Head teacher and a chairperson of the management committee prepare O&M reports.	
2-3-7 Identify and manage to obtain agreement with the agencies and/or organization to provide	
financial support to sustain the model according to the income by battery charging system.	
2-3-8 Prepare detailed plans of the pilot projects including "System design" and "Sustainable O&M"	
with staff of REA and MoE&P through OJT.	
2-3-9 Organize a stakeholder meeting with the members of management committee and owners of	
facility to discuss on operation and maintenance at least once for each pilot facility.	
2-3-10 Organize an information sharing meeting for the users of the pilot facility and County and	
Sub-county education officer(s) at least once for each pilot facility.	
2-3-11 Organize an evaluation meeting with the members of management committee and owners and	
users of facility, County and Sub-county education officers at the end of the project period at least	
once for each pilot facility.	
For Output 3 (MHP, Biogas and Wind)	
3-1. Conduct inventory and review of existing studies on MHP. Biogas and Wind.	
3-2. Prepare guidelines for rural electrification using renewable energy (MHP, Biogas, Wind) according to	
the contents of the technical trainings in terms of planning, design, procurement, monitoring and	
maintenance.	
3-3. Conduct technical training for REA / MoE&P staff on MHP, Biogas and Wind.	
3-4. Carry out simple pre-feasibility study focusing on technical examination for MHP, Biogas and Wind.	
3-5. Prepare technical recommendation for rural electrification using MHP, Biogas and Wind.	
3-6. Collect necessary data and equipment for technical trainings and development of the guidelines.	
3-7. Hold workshops for stake holders to validate guidelines on MHP, Biogas and Wind.	
For Output 4 (Policy recommendations)	
4-1 Implement and monitor the preparation activities of policy recommendations of Output 1,2 and 3.	
4-2 Organize workshop(s) on rural electrification models using renewable energy and/or present the	
results of the project by C/Ps at the domestic or international conference for information sharing	
with other stakeholders and donors in the energy sector of Kenya and East Africa.	
4-3 Compile policy recommendations.	
4-4 Initiate and strengthen the concept of Academic-Private Sector Platform in collaboration with	
JICA Experts of "the Project for Capacity Development for Promoting Rural Electrification Using	
Renewable Energy."	



Note: Number in the mark of < > shows the number of activities in PDM, and <N.S.> means "Not Specified"

A2-1

PLAN OF OPERATION (PROVISIONAL) ver. 1.0 Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy Duration: August 2011 to July 2014

Japa Keny	nese Fiscal Year (April-March) an Fiscal Year (July - June)	### 20)11/2	012	Т		201	2	2012	2/201	13						201	3	2013	201	4	Ι		_		2	014 20	14/20)15			Person
Cale	ndar Year	3	4	5 6	2 (012	9 1	10 1	1 12	2 1	2	3	4 5	20	13	8	9 1	0 1'	1 12	1	2 3	3	4 5	20)14	8	9 '	10 11	1 12	201	5	in charge
0 0-1	Preparatory activities Set up a Working Group (WG) consisting of 3 sub-groups for Outputs 1,2 and																							-	P							
0-2	3. with clarified roles and functions of the counterpart personnel. (Following baseline survey and capacity assessment activities,) Finalize the			-	+			+			$\left \right $	+	+	+			-	+	+	-	+	╉		┢	$\left - \right $		_	-		_	+	
	provisional version of PDM and PO of the Project with concrete sets of indicators by JCC.																															
<u>1</u> 1-1	Output 1 (Health service instituition Model) Review policies, studies, surveys and projects related to PV electrification of																					t		+	Η							
1-2	health institutions. Clarify components of "System design", "Sustainable O&M" and "Sustainable				+			+			$\left \right $	╡	+	+				+				+		┢	$\left \right $						+	
1-3	Infancial plan" to constitute health institution model(s). Select 3 health institutions for pilot projects			+	-			+	_				+	+				+			+	1		╞	Ħ			_				
	community leaders and the private sector for information sharing and exploring the possibility to find carable private private sector for information sharing and exploring				+																											
1-5	conduct baseline survey(s) on target communities, institions and private				-			_			$\left \right $	+	_	-		_		+	-	_	_	╉		╞	$\left - \right $		_	_		_	+	
1-6	sectors of the 1st phase pilot project sites. Conduct capacity & needs assessment of target communities, institutions and			Ŧ				+			$\left \right $							-		_		+		+	\vdash		_	-		_	+	
	the private sectors in dealing with the operation and maintenance of renewable energy facilities and the management of energy supply services																							\bot								
1-7	Conduct capacity & needs assessment of officers in relevant ministries, agencies and local governments in dealing with sensitization and education of			ŀ																												
1-8	communities users and service providers on renewable energy matters. Apply for procedures of Environmental and Social Considerations including			╈				╈					╈	+				+	\uparrow	+	╈	╈		┼	$\left \cdot \right $							
1-9	Prepare detailed plans of the 1st phase pilot projects using PV. If necessary.			╈	1								╈	1					┢		┢	t		╋	[]							
<u>1-10</u> 1-11	Organize stakeholders meetings to verify the detailed plans. Formulate the implementation plans of the 1st phase pilot projects, including			+	-	-		ł		-	H		+	+				+	-		+	╀		Ŧ	Ħ			_			+	
1-12	procurement, information & knowledge dissemination, and stakeholders' Implement and monitor the projects' activities.																															
1-13	Compile the results of the 1st phase pilot projects including benefits for users and communities.	\square	\square			Ĺ	$ \overline{ }$			Ĺ	\square	Ţ	Ţ		Ц						Ţ	Ţ		\downarrow	\square	Ц		\square	\square			
<u>1-14</u> 1-15	Examine lessons learnt from the 1st phase projects. Organize stakeholders meetings at the 2nd phase pilot project sites including	\parallel	+	+		┢	\vdash	+	+	┢	$\left \cdot \right $	┥	+	+	╞┼	+	+	+			╉	╉	+	+	\vdash	\vdash		+	+		+	
	community leaders and the private sector for information sharing and exploring the possibility to find capable private businesses to join the Project as users or											T																				
1-16	Conduct baseline survey(s) on target communities, institions and private sectors of the 2nd phase pilot project sites		+	╈	\uparrow		\square	╈	\dagger			╡	╉			+	╈	\dagger	\uparrow		+	╋	╈	\uparrow	$ \uparrow $		\uparrow	\top		\uparrow	╈	
1-17	Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable		1	\uparrow	1	t l	\square	╈	\uparrow	t l		1	╡			1	╈	t	1		╡	↑	╎	\uparrow	\square		╡	1		╡	╈	
<u>1-18</u>	Prepare detailed plans of the 2nd phase pilot projects.	H		+	\vdash	\vdash		\perp	+	\vdash	⊢	╉	\perp		⊢				\vdash		+	+	\perp	+	\vdash	⊟		\pm				
<u>1-19</u> <u>1-20</u>	Organize stakeholders meetings to verify the detailed plans. Formulate the implementation plans.	H		+		\vdash		+	+	\vdash	\square	╡	+		⊢	$ \downarrow$	ŧ						+	\pm	⊣	H				\downarrow	+	
<u>1-21</u> 1-22	Implement and monitor the projects' activities. Compile the results and lessons learnt of the 2nd phase pilot projects including							╈			$\left \right $	1	╈	+					┢			T		+	Π			1				
1-23	Examine the components of health institution model(s) to formulate guidelines and manuals on the model(s)																		1			T		1	\square							
1-24	Prepare policy recommendations with institutional framework to promote the health institution model(s).																															
<u>1-25</u> 2	Monitor and report the progress of indicators to achieve Output 1. Output 2 (School Model)																															
2-1	Review policies, studies, surveys and projects related to PV electrification of schools.																															
2-2	Clarify components of "System design", "Sustainable O&M" and "Sustainable financial plan" to constitute school model(s).																															
<u>2-3</u> 2-4	Select 2 school sites for pilot projects Organize stakeholders meetings at the 1st phase pilot project sites including			╈	+			+			$\left \right $		+	+				+	+	-	+	╉		+	┢┤							
	community leaders and the private sector for information sharing and exploring the possibility to find capable private businesses to join the Project as users or				T																											
2-5	Conduct baseline survey(s) on target communities, institions and private sectors of the 1st phase nilot project sites			+																		t		+	Π							
2-6	Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable																								\square							
2-7	energy facilities and the management of energy supply services. Conduct capacity & needs assessment of officers in relevant ministries,			+				+			$\left \right $	┥	+	-				╈			+	╉		+	\vdash	\square	-	-		-	+	
	agencies and local governments in dealing with sensitization and education of communities users and service providers on renewable energy matters.			1	-																			1	\square		_			_		
2-0	Apply to proceedings of Environmental and Social Considerations including aender consideration for rural electrification projects using PV, if necessary.			_	F																											
3 3-1	Output 3 (Business/industry Model) Review policies, studies, surveys and projects related to utilization of																					Ŧ		+	P							
3-2	renewable energy for rural (village scale) business/ industrial development. Establish the site selection criteria and procedures.			Ŧ																				\pm	\square							
3-3 3-4	Select candidate sites for pilot projects Implement field survey and finalize 3 pilot project sites.	E	╞	+		╞	H	+	+	╞	╞┼	┨	╡	+	H	┨	Ŧ	+	+	-	ſ	┨	+	\pm	╞	⊢	┦	+	╞	┦	Ŧ	
3-5	Clarity major components of "System design", "Sustainable O&M" and "Sustainable financial plan" to constitute business/industry model(s).	Ш	\downarrow			 	$ \downarrow $				\square				Щ							\downarrow		\downarrow	\square							
3-6	leaders and the private sector to explore the possibility of finding capable																															
3-7	Conduct baseline survey(s) on target communities, institions and private sectors of pilot project sites.			1	1				1			†	†				†	†	<u> </u>		†	t	1	<u> </u>	Ħ		_			_	†	
3-8	Conduct capacity & needs assessment of target communities, institutions and the private sectors in dealing with the operation and maintenance of renewable		T	T		Γ		Ţ	T	Γ	\square	T	T	Τ	\square	1	T	T		T	T	T	T	Γ			T	T	\square	T	T	
3-9	energy facilities and the management of energy supply services. Conduct capacity & needs assessment of officers in relevant ministries,	\parallel	+	+	+	$\left \right $	\vdash	+	+	$\left \right $	$\left \right $	╉	+	+	┝┤	+	+	+	+	+	+	╉	+	+	\vdash	$\left \right $	+	+	+	+	+	
3_10	agencies and local governments in dealing with sensitization and education of communities users and service providers on renewable energy matters.	Ц	\downarrow	_	_		$ \downarrow $	1	·				\downarrow	+	Ц			_			_	4	_	\downarrow	\square	\square		_	$\left \right $		\downarrow	
3-10	aender consideration for rural electrification projects using renewable energy. if Prepare detailed plans of the pilot projects consisting of "System	\parallel	+	+		\vdash	\square		-	\vdash	\square	+	+	+		+	+	+			+	╀		+	\parallel	\square			$\left \right $		+	
3-12	design" "Sustainable O&M" and "Sustainable financial olan." Organize stakeholders meetings to verify the detailed plans.			+		\vdash				\vdash	\square	\pm	+		⊢		\pm	+			+	╁		\pm	\vdash	\square					\pm	
3-13	Formulate the implementation plans, including procurement, information & knowledge dissemination, and stakeholders' training.	Ш				L	$ \!\! $			L	\square				\square									\bot		Ц						
<u>3-14</u> 3-15	Compile the results and lessons learnt of the pilot projects including benefits for users and communities	\parallel	+	+	+	\square	\vdash	+	+	\square	[]	ſ					T				T	T		T	P		1			+	╈	
3-16	Examine the components of business/ industry model(s) to formulate auidelines and manuals on the model(s)	\square	\uparrow	+	1	T		+	1	T		1	╡			╡	╈	1	1		╡	╋		+	Þ			\uparrow			╡	
3-17	Prepare policy recommendations with institutional framework to promote the business/ industry model(s).																															
<u>3-18</u>	Monitor and report the progress of indicators to achieve Output 3. Output 4 (Policy recommendations)										F											1		+	P							
4-1	Implement and monitor the preparation activities of policy recommendations: 1-24, 2-24 and 3-17. Organize workshop(s) on rural electrification models using renewable appendix			+	_	\square	\square	+	_	\square		\downarrow	\downarrow				\downarrow	\downarrow	-		\downarrow	+		+-	Ħ		\downarrow	_		\downarrow	\downarrow	
	for information sharing with other stakeholders and donors in the energy sector of Kenva and East Africa																															
4-3 4-4	Compile the policy recommendations. Monitor and report the progress of indicators to achieve Output 4.		\square	+		E		1	Ţ				1				Ţ	Ţ	Ţ		1	1	1								+	
Proj	ect monitoring reports by the monitoring team : O	Ш											+								+	+		\pm	⊣	ļ						
Join	au work plans, Annual reports, Draft final report, Final report : ▲ Coordination Committee (JCC): ☆	\mid	+	+	☆	╞		+	+	╞	Ħ		+	+	╞╡	, ☆		+	+			╞	+	\pm	⊣	▲ ☆	+	+				
<u>Tripa</u>		H		+	+	H		+	+	H		0	+		H	-	+	+	+		0)	+	+	╞						╡	
Pish		\vdash	+	+	+	+	\vdash	+	+	+	\vdash	+	+	+	⊢			+	+	-+	+	╉	+	+	\vdash	\vdash	+	+		+		

PLAN OF OPERATION (PROVISIONAL) ver.1.1 Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy Duration: March 2012 to February 2015

Japa	nese Fiscal Year (April-March)	###					201	12								2013	3							2	014				Dereer
Keny	an Fiscal Year (July - June)	20	11/2	012				2	012	/2013	3						20)13/2	014						201	4/20	15		Person
Calo	ndar Voar				20	012							2	013								- 2	2014				1	2015	charge
Cale		3	4 5	56	7	8	9 '	10 11	12	12	2 3	4	5 6	6 7	8	9 1	0 11	12 1	1 2	3	4	5 (6 7	8	9 1	0 11	12	1 2	charge
0	Preparatory activities			_					_					_		_			_				_			-	\vdash		
0-1	Set up a working Group (wG) consisting of 3 sub-groups for Outputs 1,2 and 3, with																												
1	Clarified roles and functions of the counterpart bersonnel.													-												-	\vdash	+	
1-1	Review policies studies surveys and projects related to PV electrification of health																										H-H-		
1-2	Select 5 health institutions for pilot projects.			+																								+	
	Conduct capacity & needs assessment of target communities, institutions and the private																												
1-3	sectors in dealing with the operation and maintenance of renewable energy facilities and the																												
	management of energy supply services.																										\square	\perp	
	Conduct capacity & needs assessment of officers in relevant ministries, agencies and local																												
1-4	governments in dealing with sensitization and education of communities, users, and service				T I																								
	providers on renewable energy matters	╟─┤		+	-	+					+	╉┼		-			+	-	+			-	+	╉╌╢		+	⊢┼	+	
1-5	Ω M and "Sustainable financial plan"													Ť															
1-6	Organize stakeholders meetings to verify the detailed plans.			+																						+		+	
17	Formulate the implementation plans of the pilot projects, including procurement, information																												1
1-7	& knowledge dissemination, and stakeholders' training.																												
1-8	Implement and monitor the projects' activities, and prepare policy recommendations with																												
10	institutional framework to promote the health institution model(s).													_			_		_	-			_			_		\rightarrow	
1-9	Monitor and report the progress of indicators to achieve Output 1.	╢─┤		+-	-	+		_	-		_	╉╌┤		_		_	_	_	+-			_	_	+		-	 -	+	-
2	Output 2 (School Model)											╂┼		-													┢─┼╴	_	
2-1	Review policies studies surveys and projects related to electrification of schools using																										H		
2-2	Select 5 school sites for pilot projects.			+																						1		+	
	Conduct capacity & needs assessment of target communities, institutions and the private																												
2-3	sectors in dealing with the operation and maintenance of renewable energy facilities and the												- i																
	management of energy supply services																										\vdash	\rightarrow	
~ 4	Conduct capacity & needs assessment of officers in relevant ministries, agencies and local																												
2-4	governments in dealing with sensitization and education of communities, users, and service																												
	providers on renewable energy matters Prepare detailed plans of the pilot projects consisting of "System design " "Systembolisments"	╟─┤		+-	+	+	-		-		+-	╉╌┼					-		+				+-	+		+	⊢┼	+	
2-5	O&M" and "Sustainable financial plan."													Ť															
2-6	Organize stakeholders meetings to verify the detailed plans.																											-	
27	Formulate the implementation plans of the pilot projects, including procurement, information																												1
2-1	& knowledge dissemination, and stakeholders' training.										_																\square		
2-8	Implement and monitor the projects' activities, and prepare policy recommendations with																												
	institutional framework to promote the school model(s).			_	_	+	_	_			_				\vdash		_	_	_	_			_	+		_	\square	+	
2-9	Monitor and report the progress of indicators to achieve Output 2.	╢─┤		+-	-	+		_	-		_	╉╌┤		_		_	_	_	+-			_	_	+		-		+	-
3	Output 3 (MHD Biogas and Wind)																										⊢┼		
3-1	3-1 Conduct inventory survey and review of existing renewable energy project (MHP												_																
3-2	3-2. Prepare manuals for rural electrification using renewable energy (MHP, Biogas, Wind)													-		-			+	+				+ +		+			1
3-3	3-3. Conduct technical training for REA / MoEn staff on MHP, Biogas and Wind.																		1							1			
3-4	3-4. Prepare technical recommendation for rural electrification using MHP, Biogas and																											\perp	
														_													\vdash		
4	Utput 4 (Policy recommendations)		_	-	-														-								╘═┿╴	—	
4-1	Organize workshop(s) on rural electrification models using renewable energy for information		_	-	-		-				_			-		-	-	-	+				-		_	-	F	+	
4-2	sharing with other stakeholders and donors in the energy sector of Kenya and East Africa																												
4-3	Formulate guidelines and manuals for the components of the health facilities and schools.				\uparrow																							+	
	Initiate and strengthen the concept of Academic-Private Sector Platform in collaboration with			1	1				1						Γİ												\square		
4-4	JICA Experts of "the Project for Capacity Development for Promoting Rural Electrification								Ì					1												1		+	
4.5	Using Renewable Energy "	╟─┤		+	-	+		+	-	\vdash	+	┨┤														-	╘	—	
4-5	Monitor and report the progress of indicators to achieve Output 4.	╟─┤		+	+	+	+	+	+	\vdash	+	┨┼┤		-			+ -		-	-		-	-	+ +		-	F	+	
Work	v plane Prograss reports Draft final report Final report .	╟┿┥	-+	+	+	++			+			+		+	\vdash		+		+		\vdash	+	+	+		+	┢┿	+	1
VVOrk	Coordination Committee (ICC): A	╟─┤		+	+	<u></u> + + +			*	\vdash				+	*		+		+	*	\vdash	+	+	~		+	⊢┼	+	
Joint	Coordination Committee (JCC): χ	╟─┤		+	+	+	+	+	M	\vdash	+	╉┼┤		+	Ô		+		+	M	\vdash	+	-	A		+	┢┼┼	+	1
50111	. Evaluations of the Froject (mild-term a terminal).	╟─┥	+	+	+	+	+	+	+	\vdash	+		-	+		+		-	+	+	\square	+	Ť	+	-	+	\vdash	+	1
Disp	atch of Japanese Experts to Kenya			+	t		+	+	+		+			+	L I	-			+	\vdash		+	+		-	+		#	
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PLAN OF OPERATION (PROVISIONAL) ver. 2.1 Title: The Project for Establishment of Rural Electrification Model Using Renewable Energy Duration: March 2012 to February 2015

Japane Kenyan	se Fiscal Year (April-March) Fiscal Year (July - June)	### 20)11/2	2012			2012	201	2/20	13				2013	201	3/201	14				2	014 2014	1/201	5	Pe	erson in
Calend	ar Year	3	4	5 6	20 5 7	12 8	9 10	0 11 1	2 1	2 3	3 4	2 5 6	2 013	8 9 10	0111	2 1	2 3	3 4	5	2014 6 7	8	9 10) <u>11</u>	20 1	2 ch	narge
	Activities For Preparation		T			F	T			Ŧ	F	H					T		F		Π	Ŧ	Π	T		
1	Set up a Working Group (WG) consisting of 3 sub-groups for Outputs 1, 2 and 3, with										T							T	Π							
																T					Ħ	+				
1.	A weekly project status report is prepared and shared by both C/Ps and JEs.										T															
<u> </u>	Progress report is prepared by JEs including the progress summary table according to PDM								+																	
_	to monitor and report the progress of indicators to achieve outputs.																									
1 1-1	For Output 1 (The Health service instituition Model) National Level					\square					F							F	\square							
1-1-1	Review policies, studies, surveys and projects related to electrification of health service institutions using Solar PV.																									
1-1-2	Organize a progress and information sharing meetings with REA, MoE&P, and MoH at least twice to discuss on model establishment and dissemination at national level.																									
1-1-3	Prepare policy recommendations with institutional framework to promote the health institution Prepare a proposal for the disposal of solar panels, batteries and toxic materials according to			_		\square		+	-		_		+					┢	\square		$\left \right $					
1-1-4	the current conditions and regulations							++	_		_		+			_		╀	$\left \right $							
1-2	County/Sub-county Level																									
1-2-1	project sites at least twice for Lot 1 and once for Lot 2.								_																	
1-2-2	Organize a progress and information sharing meetings with REA, MoE&P (monitoring team								+		╞		┤╴╴				_									
1-2-3	members), and County and Sub-county medical officers at least twice to discuss on model establishment and dissemination at County/Sub-county level					\square			\downarrow	\square	1	\square	\parallel				┛	\bot	\square				┦_↓	\square		
1-2-4	Conduct the baseline survey at the target facilities and surrounding communities Conduct capacity & needs assessment of County/Sub-county medical officers in terms of		+		+	┝┼			+	\vdash	╀							╉	$\left \cdot \right $	+	+	+	+	+		
	renewable energy utilization and dissemination.					H				╞	+	μĒ						+	H				Ħ			
1-3 1-3-1	Local/Institutional Level Conduct capacity & needs assessment of target communities and other stakeholders.										F															
1-3-2	Sustainable financial plan is prepared. Sufficient financial trainings for the operator of charging center, staff of health institution. and	╟─	Ŧ	-	+	+	-	$+ \overline{+}$	+	+	╀			++	$+ \overline{+}$			╞	┤╴┦				┦┤	+	+	
1-3-3	members of management committee are provided through lectures and OJT. The operator of the charging center accurately records daily sale.		+		+	\vdash	_	++	+	\vdash	+													+		
1-3-5	Assigned nurse, a treasurer and a chairperson of the management committee accurately records an account book and cash flow statement		\uparrow		1	$ \uparrow $		$\uparrow \uparrow$	1	\square	1									Ţ		f	┥╽	$\uparrow\uparrow$	İ	
1-3-6	Assigned nurse and a chairperson of the management committee prepare O&M reports.		\mp	+	1	Ħ	\mp	+	+	Ħ	1		┼╞					+		+	Ħ	+	¶_†		_	
1-3-7	financial support to sustain the model according to the agencies and/or biganization to provide Prepare detailed plans of the pilot projects including "System design" and "System.					\square		\parallel	_	\square	+							1			\parallel	_	$\left \right $	+		
1-3-8	r repare detailed praits or the pilot projects including System design and "Sustainable O&M" with staff of REA and MoE&P through OJT.					\square					┦	\square	\parallel					\bot	\square	\perp	\downarrow	\bot		\parallel		
1-3-9	Organize a stakenoider meeting with the members of management committee and owners of facility to discuss on operation and maintenance at least once for each pilot facility.				_	Ц		$\parallel \mid$		Ц			┩┤		\square				\square				\square			
1-3-10	Organize an information sharing meeting with users of pilot facility and County/Sub-county medical officer(s) at least once for each pilot facility.					\square		$\parallel \mid$				\square	$\downarrow \downarrow$		\square				\square	•			•	$\downarrow \downarrow$		
1-3-11	Organize an evaluation meeting with the members of management committee and owners and users of facility, County and Sub-county medical officers at the end of the project period																									
	at least once for each pilot facility	F				⊢			\perp	\vdash	\vdash						\square	\perp	⊢	\pm	╞	Ŧ	⊢		\pm	
2 . 2-1	For Output 2 (School model) National Level																									
2-1-1	Review policies, studies, surveys and projects related to electrification of schools using Solar Organize a progress and information sharing meetings with REA. MoF&P and MoFST at					H	-	\square	T	\square	F	\square			\square	T		F	F		Ħ		П	\square		
2-1-2 2-1-3	east twice to discuss on model establishment and dissemination at national level. Prepare policy recommendations with institutional framework to promote the school model(s)		+	+	+	+	+	++	+	\vdash	╀	$\left \cdot \right $	++		┦┼	+		╀	┝╌┞	-	$\left \right $					
2-1-4	Prepare a proposal for the disposal of solar panels, batteries and toxic materials according to the current conditions and regulations				1													1	\square							
2-2											T							1				+				
2-2-1	Account book and cash flow statement are submitted to County Education Officer(s) of the																	F								
2-2-2	Owners are submitted to County Education Officer(s) twice for Lot1 and once for Lot 2.		+		1			++	+	Ħ	1		╪╞					+					ŧ †			
2-2-3	members), and County and Sub-county education officers at least twice to discuss on model																			4						
2-2-4	establishment and dissemination at County/Sub-county level Conduct the baseline survey at the target facilities and surrounding communities		+			Ħ			+	Ħ	╞		++					╞	Ħ	+	Ħ	+	╞┼			
2-2-5	conduct capacity & needs assessment of County/Sub-county education officers in terms of renewable energy utilization.					\square		\parallel		\square			┿┥					1	\square		\square		\square			
2-3	Local/Institutional Level																									
2-3-1 2-3-2	Conduct capacity & needs assessment of target communities and stakeholders. Sustainable financial plan is prepared.		+			⊢					╞							1								
2-3-3	Sufficient financial trainings for the operator of charging center, staff of school, and members of management committee are provided.							\square																		
2-2-4	The operator of the charging center accurately records daily sale. Head teacher, a treasurer and a chairperson of the management committee accurately		-	+	+		+	┼╀	+	+	+	$\left \cdot \right ^{-}$	┼┨										╏	╉		
2-3-5 <u>2</u> -3-6	record an account book and cash flow statement. Head teacher and a chairperson of the management committee prepare O&M reports.	⊢	_			\vdash		+	_	\vdash	╞	\vdash	╧													
2-3-7	Identify and manage to obtain agreement with the agencies and/or organization to provide		T						Τ		Τ								\square	Τ	Π	Τ	Π			
2-3-8	with staff of REA and MoF&P through 0.1		T		1	$ \uparrow $			+				$\uparrow \uparrow$					1			\square	╡			1	
2-3-9	Organize a stakeholder meeting with the members of management committee and owners of facility to discuss on operation and maintenance at least once for each mite facility.				1	$ \uparrow $		$\uparrow \uparrow$			1		┥┤		$\uparrow \uparrow$			1				1				
2-3-10	Organize an information sharing meeting for the users of the pilot facility and County and Sub-county education officer(c) at least once for each pilot facility.		\uparrow		1	$ \uparrow $	\top	\dagger	\uparrow	$ \uparrow$	\uparrow		$\uparrow \uparrow$		$\uparrow \uparrow$			\uparrow		-	$ \uparrow $		∳ İ	$\uparrow\uparrow$		
2-3-11	Organize an evaluation meeting with the members of management committee and owners and users of facility. County and Sub county education of management committee and owners		+			$ \uparrow $		$\uparrow \uparrow$	+	\parallel	\uparrow		\dagger		$\uparrow \uparrow$		\square	\uparrow		+	\parallel			$\uparrow \uparrow$		
2-0-11	and users or racinty, county and Sub-county education officers at the end of the project period at least once for each pilot facility					\square				\square			++	\parallel				1	\square		\parallel		┦┤	$\downarrow \downarrow$		
3.	For Output 3 (MHP, Biogas and Wind)					Ħ					+_							1_			Ħ					
3-1	Conduct Inventory and review of existing studies on MHP, Blogas and Wind. Prepare guidelines for rural electrification using renewable energy (MHP, Blogas, Wind)	┢┤	1		+	┝┼	+	++	+	\vdash																
3-2	according to the contents of the technical trainings in terms of planning, design, procurement, monitoring and maintenance					\square		\parallel		\square																
3-3 3-4	Conduct technical training for REA / MoE&P staff on MHP, Biogas and Wind. Carry out simple pre-feasibility study focusing on technical examination for MHP, Biogas and		+	+	+	\vdash	+	++	+	\vdash																
3-5	Prepare technical recommendation for rural electrification using MHP, Biogas and Wind.	⊫																								
3-6 3-7	Louect necessary data and equipment for technical trainings and development of the Hold workshops for stake holders to validate guidelines on MHP, Biogas and Wind.	┢																T								
4	For Output 4 (Policy recommendations)										+							\mathbf{L}	\square		H		H			
4-1	Implement and monitor the preparation activities of policy recommendations of Output 1, 2 Organize workshop(s) on rural electrification models using renewable energy and/or present	╟╴	╀	-	+	+	-	+ T	+	+	╀	+	╉	$+\mp$	$+ \mp$	+	\vdash	╀	$ \overline{ }$	F	+		Ħ	+	+	
4-2	the results of the project by C/Ps at the domestic or international conference for information sharing with other stakeholders and donors in the energy sector of Kenya and East Africa																							_		
4-3	Compile policy recommendations.		+			H		++		F	1	\square	++	++	\square	\square	+	1	Ħ	-	Ħ	+		╡┼	—	
4-4	JICA Experts of "the Project for Capacity Development for Promoting Rural Electrification										-															
Mart					+	Ħ		++	+		1		++					1	Ħ		Ħ		Ħ			
Joint C	ומוז, רוסgress reports, טרמת זוחמו report, רוחמו report : ▲ oordination Committee (JCC): ☆							☆			╘			☆					\square		☆				☆	
Joint E	valuations of the Project (mid-term & terminal):	╞											+													
Dispate	h of Japanese Experts to Kenya			+	+				+									1				+				

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Position	Name						201	12											20	013												2014	1						20	015	l st	2nd	3rd	
		3	4	1	5	6	7	8	9	10) 1	1 12	2 1	1 2	2	3	4	5	6	7	8	9	10	11	12	1	2	: 3	4		5	6	7	8	9	10	11	12	1	2	year	year	year	Total
Team Leader/Wind Power Generation	Tsutomu DEI							I													1										-										5.67	3.93	5.40	15.00
Sub Leader / Rural Electrification / Micro-	Yuichi UEDA/ Yoshiaki SAMEJIMA																																								5.20	4.20	4.30	13.70
Photovoltaic Power Generation	Kunio ASAI												I																												6.53	1.57	0.00	8.10
Biomass/gas Power Generation	Yuka NAKAGAWA																																								4.20	3.70	3.90	11.80
Financial Management	Hidehito WAKABAYASHI																																								2.00	2.00	1.00	5.00
Socio-economic Survey and Community	Yoko KITAUCHI					-																																			2.00	3.00	3.40	8.40
Project coodinator/Support of Procurement and	Ken SHIMOMUKAI																																								5.40	3.00	3.73	12.13
Procurement and Supervision of Pilot	Katsuhiko Otaki																																								2.00	2.63	0.00	4.63
Environment and social consideration	Kenji Igarashi																																								2.90	2.00	0.00	4.90
Solar PV / Procurement and Supervision of Pilot	Bista Deepak																																								0.00	3.07	4.73	7.80
									((Work	k/Pla	n)																																91.46
										PG,	/R (1)))					(PG	6/R (2)))				(PC	G/R (3	;))				(PC	1 G/R (4	1)) 1))					(PG/R	: (5))				(Final/R)			

Record of Experts Dispatch

Kenya



IPPON KOEI CO., LTD.

Project Office in Nairobi Mumbu Holdings Godown, Mombasa Road, Nairobi, KENYA (Opposite to JKIA turnoff) Email: a6046@n-koei.co.jp Head Quarters 4, Kojimachi 5-chome, Chiyoda-ku, Tokyo, 102-8539, JAPAN *phone* +81-3-5276-2420 *fax* +81-3-5276-3303 http://www.n-koei.co.jp/

The Project for

Establishment of Rural Electrification Model using Renewable Energy in Kenya

To: Eng. Kamweru Chief Manager Renewable Energy Department Rural Electrification Authority The Chancery 6th Floor, Valley Road, Nairobi, Kenya

Your ref.

Our ref. LARE-15-013

Date: 19th February, 2015

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TITLE: HANDOVER OF EQUIPMENT

Dear Sir,

We hereby hand over the equipment for office and monitoring purchased under the captioned Project to Rural Electrification Authority (REA) at the end of the captioned Project. The list of the equipment is as in the Attachment.

You are kindly requested to keep and utilize the equipment under your due management

Yours Faithfully

Tsutomu DEI Project Leader, JICA Expert Team The Project for Establishment of Rural Electrification Model Using Renewable Energy

Attachment: List of Equipment handed over from JICA Expert Team to REA



Cc: (1) NK Tokyo (2) ЛСА HQ, (3) ЛСА Kenya Office File to: Project Office

Form R.007.F1 Issue 0 (1 Sept 2009)

Project for Establishment of Rural Electrification Model Using Renewable Energy

Attachment to the Letter Reference No. LARE-15-013

List of Equipment handed over from JICA Expert Team to REA

	Nos.			Cost in	Cost in	Date of
Item	of	Model	Serial No.	KSh.	JPY	Purchase
Desktop Computers			TRF1360026			
(computers with anti-virus software)	3	HP	TRF136001G	342,000		29th May 2012
Photocopy Machine (with A3/A4						
laser printing and scanner function)	1	S/NFAJ11641 (2020L)	FAJ11641	380,000		30th May 2012
Auto CAD	1	LT 2013	-	95,000		31st May 2012
Projector	1	Epson ES01 2600 Lume	-	56,000		29th May 2012
		1500KVA Mercury	110514M1500N00112/ 110514M1500N00696/	10.000		20th May 2012
UPS	3	Smart	110514M1500N00685	42,000	20.007	29th May 2012
GPS	1	Garmin eTrex30	2DV214946		29,907	Sth June 2014
Satellite Phones	2	Thuraya XT	IMEI35697802-208171-2 IMEI35697802-208741-2	255,351		24th March 2014
Refractometer (for density measurement)	2	RHA-200ATC	-		13,889	28th June 2014
Refractometer (for density measurement,	2	B-012	-		9,574	29th Sep 2014
Current Meter	1	UC-200V	2329		427,464	27th June 2014
AC/DC Digital Clamp meter	2	KEW MATE 2012R	0348509 0343189		27,709	20th June 2014
pH Meter	1	M610T	19248		5890	19th May 2014
ORP Meter	1	RM-30P	745895		58,500	2/th June 2014
Methane Gas Detector	1	XP-3140	14007419		158,400	5th June 2014
Laser Distance Meter	1	GLM 80	402465369		19,395	19th May 2014



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