

**THE FRAMEWORK SYSTEM FOR
PLANNING, PREPARATION, IMPLEMENTATION AND
OPERATION OF RENEWABLE ENERGY
OFF-GRID PROJECTS**



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ABBREVIATIONS

Commune PC	Commune People Committee
CEU	Commune Electricity Unit
DOF	(Provincial) Department of Finance
DOI	(Provincial) Department of Industry
DONRE	(Provincial) Department of Natural Resources and Environment
DOST	(Provincial) Department of Science and Technology
DPC	District People Committee
DPI	(Provincial) Department of Planning and Investment
EIA	Environmental Impact Assessment
EPC	Engineering Procurement Contract
FS	Feasibility Study
FSM	Financial Service Model
IOR	Investment Opportunity Report
IPP	Independent Power Producer
IPR	Investment Project Report
MHP	Mini Hydro Power
MOF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MOU	Memorandum of Understanding
MPI	Ministry of Planning and Investment
N/A	Not applicable
ODA	Official Development Assistance
O&MM	Operation, Maintenance and Management
O&M	Operation and Maintenance
PC	Power Company
PPA	Power Purchase Agreement
PPC	Provincial People Committee
PMU	Project Management Unit
RE	Renewable Energy
Sida	Swedish International Development Agency
VND	Vietnam Dong
VSRE	Vietnam – Sweden Renewable Energy Programme

RATIONALE

In order to achieve the targets for the “Acceleration of the Electrification in rural and mountainous areas”, as specified in the “National Energy Strategy” and in the “Master Plan on Power Sector Development”, the Ministry of Industry and Trade (MOIT) of Vietnam has set up the Rural Electrification Programme with three main objectives: (i) Increase the areas with access to the electricity grid: 95% of the households are capable to access the national electricity grid by year 2015. (ii) Upgrade the low voltage distribution networks managed by the local authorities: it concerns about 3,500 out of 8,999 communes nation wide and (iii) Develop off-grid RE projects to supply electricity to the communes which can not be connected to the national electric grid.

To fulfil the above mentioned objectives and speed up the Rural Electrification Programme, the MOIT has established the Rural Electrification and Renewable Energy Project Management Board (REREB) since December 2006. REREB is responsible for the coordination and management of the rural electrification and renewable energy projects/programmes in the country, which are financed by State and/or International Financial Institutions and Donors.

Most of the non-electrified communes are located in remote and mountainous areas where scattered minority ethnic groups are living in poor socio-economic conditions. When available, electricity is dominantly used for domestic purposes, as industrial activities are not yet developed. Therefore, the earnings from electricity sales are usually very low. Supplying electricity to people in remote, mountainous areas, especially to ethnic groups via such off-grid projects is driven by social concern, which requires a great support from the Government.

Beside a certain portion of the annual budget from the Government invested in rural poverty reduction and/or remote area development, other sources from international assistance like ODA grants, soft loans from financial donors/lenders are crucial to support off-grid rural electrification in Vietnam.

However, when small scale renewable energy projects are implemented in the framework of international co-operation programmes, their review and approval are often combined with disproportionately high administrative costs. It is therefore necessary to have a mechanism that helps ODA Agencies and other project sponsors deal with such small investments.

MOIT has therefore decided to develop a “Framework System for Planning, Preparation and Operation of Off-grid Renewable Energy Projects”, which aims at providing a systematic description of the administrative procedures and at minimizing the administration costs for Off-grid Renewable Energy projects. This Framework System also describes the role of MOIT, of the PPCs and other stakeholders. It is targeted towards International Financial Institutions or/and Donors willing to support off-grid RE project development.

The Framework System integrates the Vietnamese system to plan, finance and implement such projects. It describes methodologies, routines and requirements for RE off-grid planning and selection of projects. It provides an outline for Feasibility Studies as well as approval procedures, fund disbursement channels, auditing and reporting routines.

For each project to be financed, MOIT would guarantee that the project has been prepared in accordance with the agreed and approved Framework System. ODA agencies would then feel comfortable to allocate funds for the implementation such projects. The process will be fully transparent and ODA agencies shall have the right to audit accounts for project implementation and, if found necessary, to review parts or all of the documents forming the basis for the project approval.

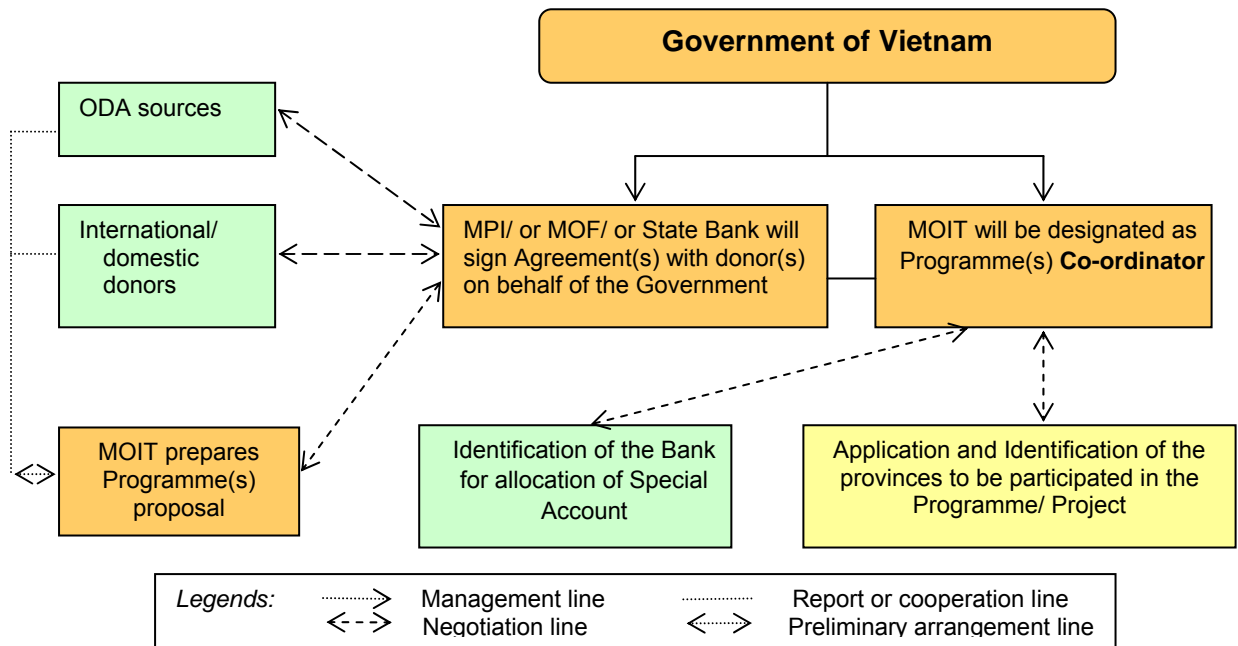
This document is a living document to be regularly updated according to new developments in the Vietnamese policy and legal frameworks.

Part I.
GENERAL CO-FINANCING MECHANISMS

Co-financing for RE off-grid projects is developed through two main phases: (i) Structuring of the financing in relation to the identified sources and creation of a monitoring structure; (ii) Financing of projects.

The processes can be illustrated in Figures 1 & 2.

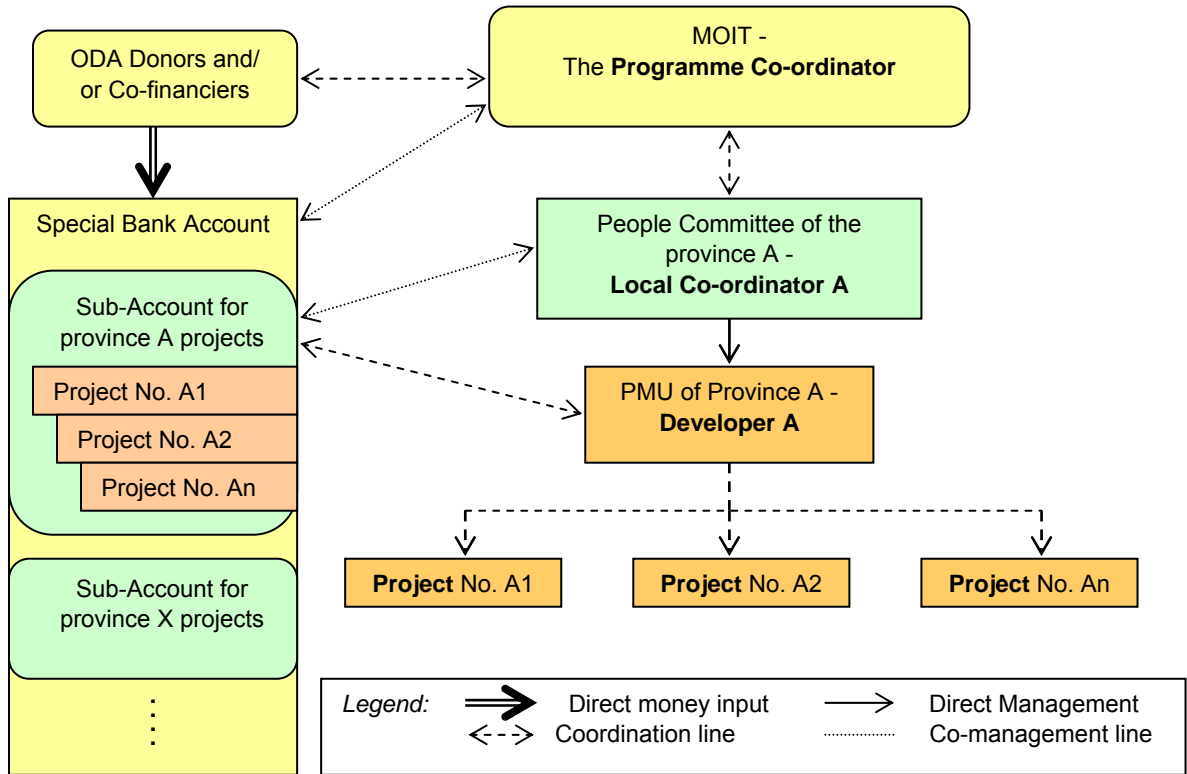
Figure 1. Organisational arrangement for using co-financed sources to projects



Playing the role of central focal agency for rural electrification, MOIT must seek for available financing sources, preliminarily negotiate and get commitment of the potential donors. MOIT has to prepare proposal documents and submit them to the Government (through MPI). By decision of the Prime Minister, MPI (or MOF/ State Bank) will sign an Agreement with the donor(s), on behalf of the Government. For the implementation of the Agreement, MOIT will be assigned the role of *Central Programme Co-ordinator*¹ (or *National Programme Implementing Agency*). MOIT officially forwards the programme TORs to the relevant provinces for their application. The provinces which apply and which conform best to the programme criteria will be selected and their PPC becomes the *Local Programme Co-ordinator*. PPCs manage the projects within a sub-programme implemented in the province. To develop projects, the Provincial People Committee (PPC - the *Local Coordinator*) should establish a Project Management Unit (PMU - the *Project Developer*), which is responsible for the implementation of the projects and reports on the implementation to the PPC. MOIT manages the ODA funds, based on agreements with the ODA donors. MOIT will deposit the funds in the Special Bank Account and then will transfer the grants to each separate project accounts opened at bank branches where the projects are implemented. The *Local Coordinator*, together with the Bank, manages the funds allocated to the province, while the *Developer* implements the payments for projects via the Bank, as shown in Figure 2.

¹ For RE off-grid project, because of its size, where it stands alone, it should be managed by local government. Central ministries mostly concern about programmes related to regions (Northern, Central, Southern) or several provinces. Therefore, it's here mentioned only the function of programme co-ordinator of MOIT in the national level.

Figure 2. Organisation of project implementation phase



Part II.

OVERALL PROCEDURES

for planning, preparation, implementation and operation of Renewable Energy off-grid Projects

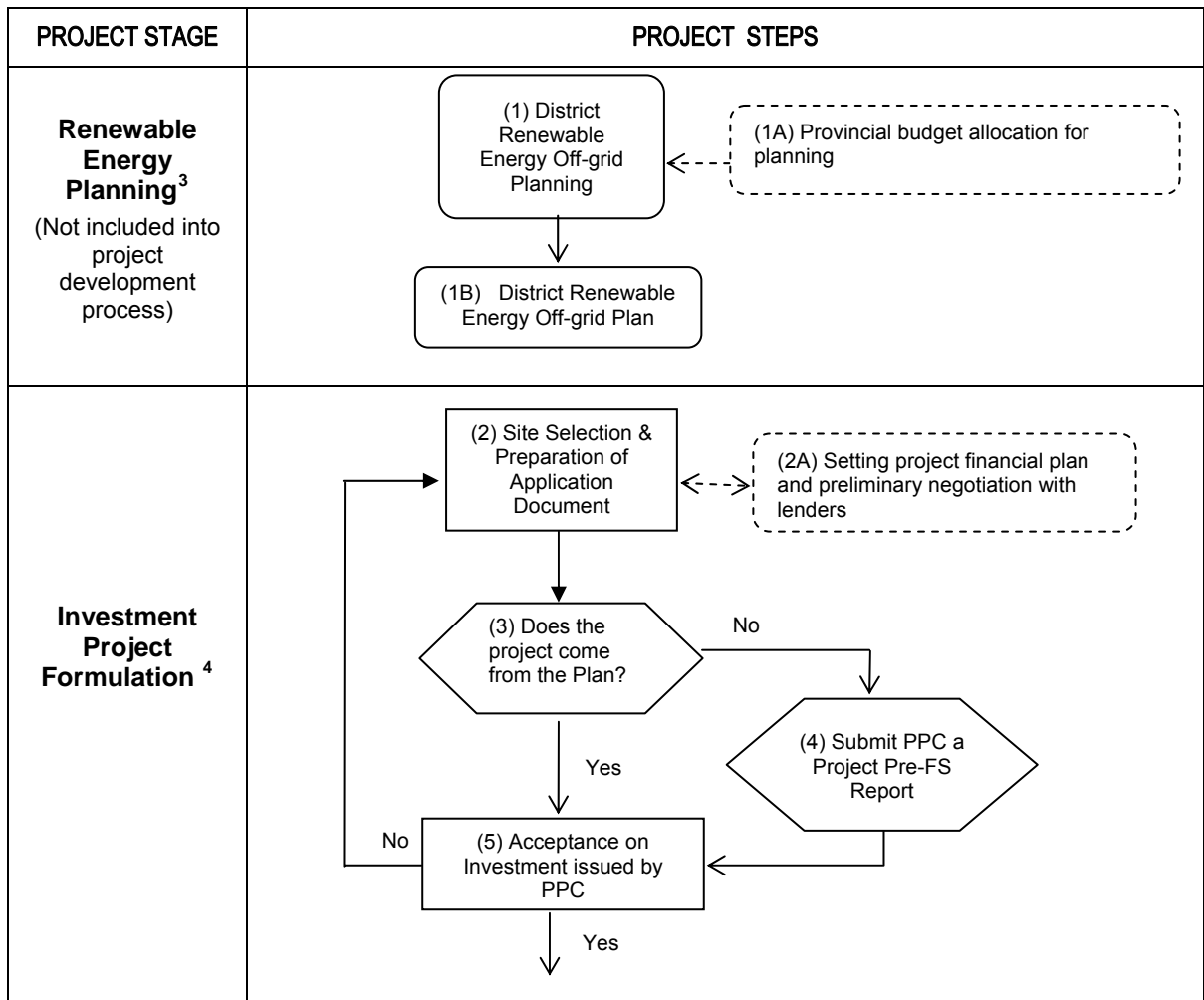
In accordance with Vietnamese legal guidelines², a project is developed through four stages, namely (1) Project Formulation, (2) Investment Project Preparation, (3) Investment Project Implementation and (4) Project Operation and Management.

The stages are further divided into several steps.

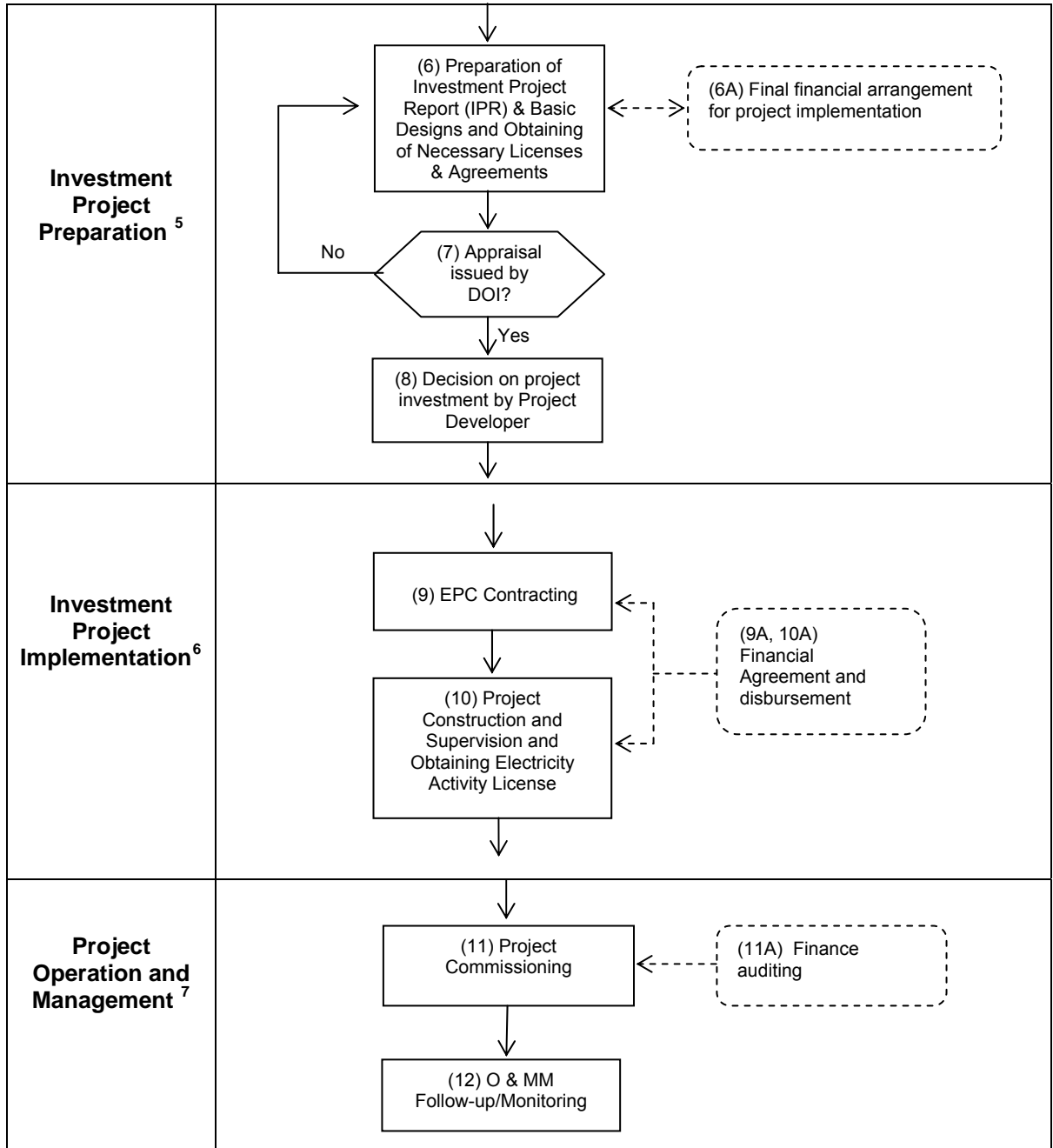
A project is usually selected based on a list of projects listed in already approved (national/ provincial/ district) development plans. A proposal of any renewable energy off-grid project should also follow this way and should be selected from a prior approved renewable energy off grid plan. Such plans are not yet commonly available in Vietnam. Therefore, a (district) renewable energy off-grid planning should also be included in the frame of project development, though planning in principle is not directly related to the course of project development.

The overall procedures are shown in Figure 1.

Figure 1. Overall flow chart of a project development



² Refer to :
 [2] Law of Investment No. 59/2005/QH11,
 [3] Law of Construction No. 16/2003/QH11,
 [4] Governmental Decree No. 16/ 2005/NĐ-CP,
 [5] Governmental Decree No. 112/2006/NĐ-CP.



The targeted off-grid projects are generally pre-determined by the PPC and therefore, the PMU can skip the stage of Project Formulation (Items 1 to 5) introduced in Figure 1 and will start immediately with the Investment Project Preparation (Project Feasibility Study – Items 6 to 8). After that, each project will be implemented by an EPC contractor (Items 9 to 11).

The detailed working frames of each stage are described in Part III of this document.

³ Refer to: [20], [22];

⁴ Refer to: [2], [3], [4], [21], [23]

⁵ Refer to: [2], [3], [4], [21], [23].

⁶ Refer to: [2], [3], [4], [5], [6].

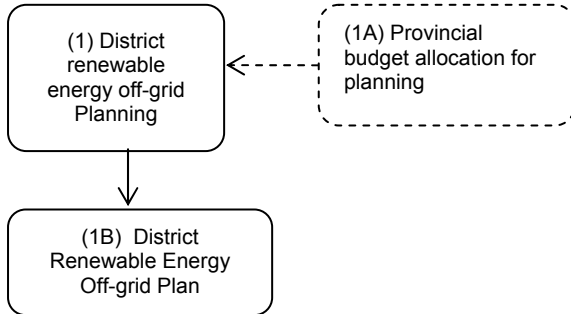
⁷ Refer to: [2], [19]

Part III.

DETAILED PROCEDURES

for Planning, Preparation, Implementation and Operation of renewable off-grid Projects

III.1. District renewable energy off-grid Planning - Item (1) -



District renewable energy off-grid planning is the first mandatory stage for Renewable Energy Development of each province. At present, in almost every province, a *Provincial Electricity Plan* usually exists. It is prepared by provincial DOI (on behalf of PPC) and approved by the Ministry of Industry and Trade (MOIT).

For off-grid areas, there is also a need to prepare District Renewable Energy Off-grid Plans (Item 1B) which is the responsibility of DOI. The Plans are

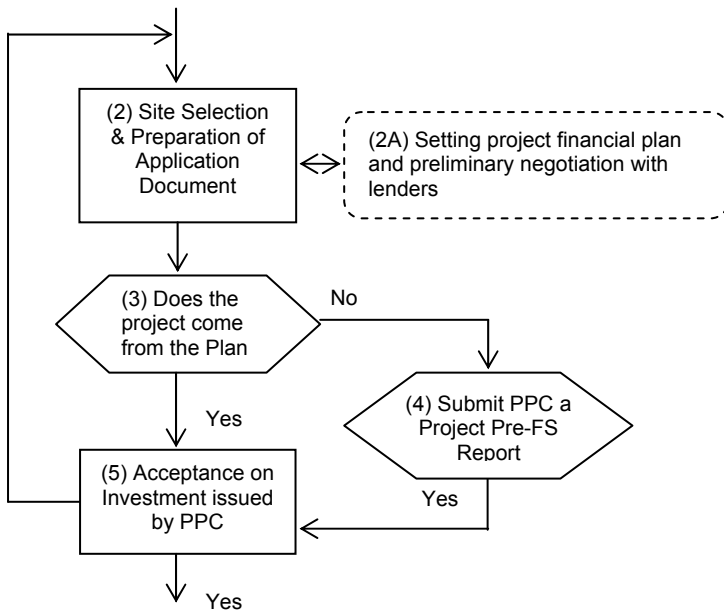
then submitted to PPC for approval.

This planning is divided into three stages: (i) Planning Initiation, (ii) Plan Preparation and (iii) Plan Implementation.

The detailed contents and procedures for District Renewable Energy Planning are described in Appendix 1

Budget for district planning - Item (1A) - PPC allocates budget for District RE off grid Planning.

III.2. Renewable energy off-grid Project Formulation



(i) Site selection - Item (2)

For site selection, the Project Developer should develop his/her own selection criteria based on the provincial objectives. The selection criteria can include but are not limited to the aspects listed in Table 1. Each Project Developer may have some criteria that could be added to the list. Some criteria could also be removed if not relevant.

With the prepared short-list of sites, the Project Developer can start the site screening and select the most preferable site for the project. The screening should include the confirmation of the selection and compare with other sites. The report

of site screening ought to be submitted to and approved by PPC.

Table 1. Basic site selection criteria for RE off grid projects

<ul style="list-style-type: none"> • The site shall not be connected to the National Grid within the next ten years and shall offer potential for the use of renewable energy.
<ul style="list-style-type: none"> • The site must have either no or only unreliable, unaffordable, inappropriate, and/or unsustainable electricity supply.

- The economic efficiency on the site is assumed to improve from access to reliable and affordable energy supply.
- Possibilities for integrating with other development activities.

(ii) Preparation of Investment Report and Investment Registration - Item (3), (4):

If a project and its site are selected from the list available in the district renewable energy planning, the Project Developer then submits PPC an *Application for Investment Registration*. By receiving the acceptance, the Project Developer will start the next stage, i.e. the “*Investment Project Preparation*”.

If the Project Developer wants to choose a site outside the district renewable energy planning, he/she should submit an *Investment Report* (equivalent to former Pre-Feasibility Study Report) and an *Application for Investment Registration* to PCC for Acceptance - Item (5). After that, the *Investment Project Preparation* will start.

The Investment Report should be prepared for the Project Developer by a consulting organization.

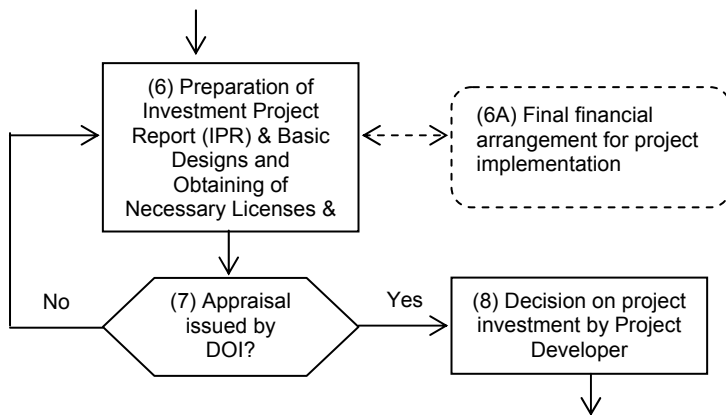
The contents of an Investment Report are shown in Appendix 2.

(iii) Submission of preliminary financial plan - Item (2A) -

The Project Developer must submit his/ her plan of financial arrangement together with the Application for Investment Registration. PPC issues the project Acceptance only if the project financial arrangement seems to be sound.

III.3. Investment Project Preparation - Item (6)

Investment Project preparation includes (i) Investment Project Report (ii) Basic Design Report, including necessary Drawings and Annexes and (iii) Obtaining necessary licenses.



(i) Investment Project Report (IPR)
Content of the Investment Project Report (formerly called *Feasibility Study Report*) is shown in Appendix 3.

(ii) Basic Design Report:
The content of the Basic Design Report is shown in Appendix 4.

All documents for the Investment Project Report, Basic Design Report, including drawings and appendices should be prepared by an authorized

consulting organization.

The documents are mandatory and must be submitted to the Provincial DOI. DOI will appraise them and send their comments to the Project Developer - (Item 7). Then, the Project Developer decides whether to carry on with the project or not after obtaining the decision of the PPC - (Item 8).

(iii) Obtaining necessary licences/authorizations/agreements

For the projects with a total investment higher than 15 billion VND, the Project Developer ought to submit a Request to the authorized body for issuing the Certificate of Investment prior to carrying on with the project investment. However, most RE off grid electrification projects are small and their investment costs are definitely lower than 15 billion VND. In this case, the procedure for obtaining a Certificate of Investment can be avoided.

During the Investment Project Preparation stage, a Project Developer must obtain necessary licences/ authorizations/ agreements, including:

1. Land Use Licence;
2. Natural resource use Licence;
3. MoU on Land Clearance;
4. Agreement on Resettlement and compensation;
5. Environment Impact Assessment Report approved;
6. Obtainment of Agreement on Financial arrangement with relevant co-financers;
7. Licence for Construction;
8. MoU on Power Purchase.

The details regarding this documentation can be found in Appendix 5.

The costs for the Investment Project Preparation are borne by the Project Developers.

***Final financial arrangement*⁸ - Item (6A)**

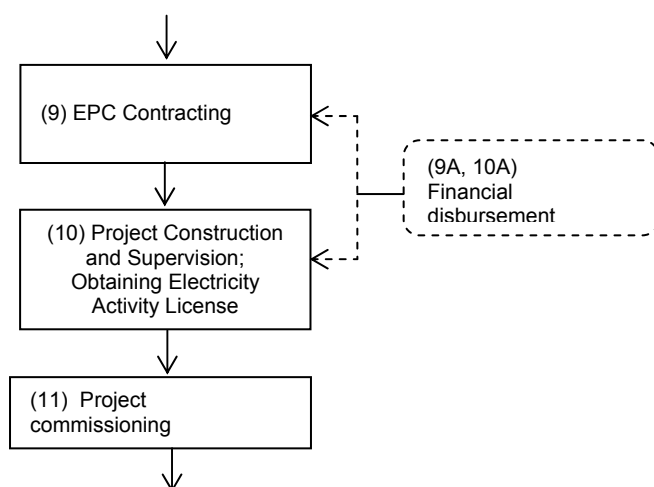
Part of a project investment will be granted to the project by ODA and other donors via governmental channels. The Vietnamese side (central and local governments) contributes a counterpart to be agreed with each donor (by cash and/or in kind, from the annual budget or from public mobilisation etc.).

All these arrangements shall be described in the Investment Project Report.

The procedure for financial arrangement is shown in Appendix 6 where a model for financial management and for the disbursement of 100% ODA grants and state budget sources is proposed.

By the end of the “Investment Project Preparation” stage, the Project Developer should finally obtain all agreements related to financial contributions with the relevant co-financers.

III.4. Investment Project Implementation



The Investment Project Implementation stage includes⁹: (i) EPC contracting, (ii) Financial disbursement and (iv) Project construction, commissioning.

(i) EPC Contracting - Item (9)

As the investment of a RE off-grid power project is rather low, to simplify the process of Investment Project Implementation, the EPC contracting should be applied for such projects. The EPC bidding and contracting should be conducted according to the Vietnamese Law of Procurement. The EPC contracting will consist of three steps:

- (i) Bidding preparation, (ii) Tender round, (iii) Appraisal and approval of winning bid.

The detailed contents and procedures of the EPC contracting process are described in Appendix 7.

(ii) Financial disbursement - Item (9A, 10A)

The Procedure for Financial Disbursement and its Monitoring are described in Appendix 8.

(iii) Project construction - Item (10)

The project construction is implemented by the selected EPC contractor.

The Developer and its authorized consultant supervise the construction on site.

⁸ For detailed description of Financial model refer to [18]

⁹ See: [3] - Law of Construction No. 16/2003/QH 11 and [6] - Law of Procurement No. 61/2005/QH 11.

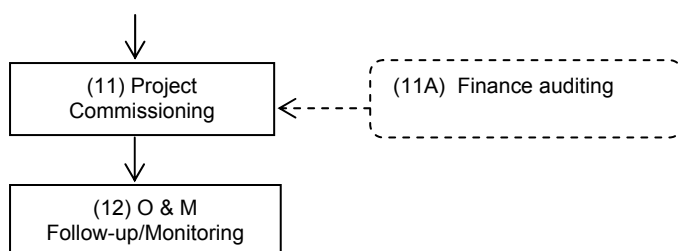
The project is usually divided into several components, e.g. dam, turbine, penstock (for MHP project), electricity line, etc. After completion of the construction of each component or sub-component (especially the underground one) the taking over procedure for that particular work should be performed. Based on this, the Contractor can request the Developer to pay for the partial value of the package (Item 9A, 10A - See Appendix 8). The conditions for taking over and payment are defined in the EPC contract.

(iv) Project commissioning - Item (11) - After completion of all construction works, the project commissioning shall be conducted by the Developer together with the Contractor and the Representative of the future Project Operator. The following aspects must be considered:

- Technical issues: Assess the quality of the installed equipment, the quality of the constructed works and the total volume of the project construction;
- Financial issues: Set up the overall balance-sheet of the project;
- Agreement on project taking over and transferring to the Project Operator;
- Definition of Guarantee conditions;
- Decision on and carrying out the Acceptance Test for the project.

III.5. Project Operation and Management

After commissioning (Item 11) described in the previous section, the Operator will start the project operation.



The operating staff should already have been trained during the Project Implementation phase. It is usually a part of the contract between the project developer and the equipment supplier.

(i) Financial Audit - Item (11A)

The Project Developer approves the overall balance sheet of the project set up during commissioning and disburses the last payments to the contractors. The Project Developer may then organize a financial audit.

The Project Coordinator/ co-financers may also request an ad-hoc financial audit at any time during the project implementation..

(ii) O&M and Management - Item (12)

Before commissioning, the Project Developer should already have a guideline from the PPC on the model and establishment of the entity for Operation, Maintenance and Management of the project.

For the projects invested by the state budget (including ODA and other loan to Government for rural off-grid electrification), the model of O&M and Management can be selected among the following options:

- Entrusting an existing state-owned company to take the role of project owner, manager and operator. In this case, the assets of the project will be automatically transferred to the company, which bears the obligation of managing the state assets in accordance with the laws.
- The plant will be transferred or leased by PPC to a selected competent organization or a newly established community electricity cooperative. The conditions for leasing are based on the government policies and have to be clearly formulated in the contract concluded between PPC and the Leaseholder.

The ownership of the project remains with the State (PPC acts on its behalf).

Framework System for off grid Renewable Energy Projects

For detailed information on the arrangement of project operation, maintenance and management after commissioning, see "*Institutional Models for off grid RE project operation and management*", VSRE - Hanoi 2007) [19].

APPENDICES (SUPPORTING DOCUMENTS)
APPENDIX 1
DISTRICT RENEWABLE ENERGY OFF-GRID PLANNING

I. Procedure

The planning is financed from local budget and developed through three stages: (1) Planning Initiation, (2) Plan Preparation and (3) Plan Implementation.

No	Project steps	Who's doing what	Output
(i) Planning Initiation			
1	Request for District Planning	<ul style="list-style-type: none"> - DPC submit to DOI a requests for their district planning based on the needs of socio-economic development; or - DOI makes a proposal of district planning for the whole province based on the needs for provincial socio-economic development. 	<ul style="list-style-type: none"> - DPC official Correspondence sent to DOI (not later than July of any year). - List of the districts need to be included in the planning drafted by DOI. - A Report submitted to PPC before August of that year
2	Assessment of the proposal for planning	<p>PPC assesses all proposals for the following year working plan, including the DOI proposals for District Planning; (The work must be completed as soon as possible to allow time for the preparation of provincial plans and to request governmental budget allocation for the following year (by the end of September).</p>	<p>In case the proposal is accepted:</p> <ul style="list-style-type: none"> - PPC sets the direction for the Planning - PPC issues a Decision on the preparation of Plans, entrusts DOI to carry out the planning following some conditions (financial, timing, place, scope ...). - The Decision is also sent to the concerned DPC for acknowledgement and for cooperation with DOI in carrying out the Planning; <p>If the proposal is not accepted, PPC asks DOI to amend it and to submit it again in the following year (if the amendment could not be submitted in time within the same fiscal year).</p>
(ii) Plan Preparation			
1	Perform the planning	<ul style="list-style-type: none"> - DOI is in charge of preparing the planning documents. - Usually, DOI contracts the services of a consulting organisation for doing the work 	Draft of planning report
2	Preliminary appraisal	<ul style="list-style-type: none"> - DOI organises a consultation meeting for preliminary appraisal with the participation of relevant organisations such as DPI, DOF, DOST, DONRE, Provincial Electricity Entity, etc. - If necessary, DOI asks the consulting partner to revise the prepared Plan. - DPC as a stakeholder and a beneficiary of the process ought to closely cooperate with DOI for carrying out the Planning, especially in the provision of information. 	Complete Plan to be submitted to PPC for approval
3	Assessment and approval of the Plan	<ul style="list-style-type: none"> - PPC assesses the planning documents submitted by DOI (through consultation meetings), - PPC requests DOI for amendment if necessary and/ or approves the proposed Plan; - PPC sets up the policy for the Plan implementation and issues the Decision of approval; - PPC officially promulgates the Plan. 	Promulgation of the Plan by PPC

(iii) Plan Implementation

Depending on the policy set up by PPC for the Decision of the planning approval, the Plan will be implemented in two ways:

(1) Implementation with a direct (local) government involvement:

- *100% of state budget investing in special projects*: In some very specific conditions (social, political ...), and if the implementation of the proposed projects is considered very urgent, the government will finance the total project investment costs. In these cases, the total budget allocation, timing schedule, institutional arrangement, etc. would be determined clearly in advance and usually entrusted to DOI for implementation.

- *(Local) government partial involvement* (shared investment with donors/ other partners):

For the needs of provincial socio-economic development, the PPC will allocate a part of its budget to invest to the (proposed) projects; PPC sets up the policy for implementation (invitation for sharing investment or mobilisation of other sources...) and entrusts an organisation (for instance, DOI) to be in charge of project implementation.

(2) Invitation of participation of stakeholders for (the proposed) project(s) implementation without direct involvement of the (provincial) government: DOI will be a coordinator for the management of implementation. The result of District planning is usually a suggestion for project proposal to be discussed in section III.2.

II. Proposed contents for the Planning Report

A Planning Report should include:

- Introduction
- Legal bases for planning: Documents like the Proposal and Decision of authorized organisation on making plan, guidelines of authorized organisations on the preparation of planning, agreements of related issues (if any), etc.

Chapter I. Identification of the target areas

- Area location: Name of communes/ villages/ groups of households, district and province;
- Characteristics of natural and socio-economic conditions of the area;
- The plan for national electricity network extension.

Chapter II. Supply and demand balancing

- Identification of Renewable energy resources and selection of appropriate technologies;
- Clarification of probable power capacity to be produced from renewable energy sources;
- Summary of electricity demand forecast;
- Balancing supply-demand for the planned areas.

Chapter III. Alternatives of power supply. Network planning and estimation of a bill of (construction) quantities

- Description of power supply alternative and electric network planning (drawings of electric distribution lines).
- Estimation of total cost of the project.

Chapter IV. Economic and financial analysis of the plan

- Economic analysis for the DREOG plan;
- Financial analysis for the DREOG plan.

Chapter V. Analysis of the impacts of the implementation plan on the considered areas and the district

Positive and/or negative impacts of the implementation plan on environment and socio-economic development of the area;

Chapter VI. Conclusion and recommendation.

Annexes

APPENDIX 2.

PROPOSED CONTENTS FOR THE INVESTMENT REPORT (Pre-Feasibility Study Report)

- 1. Introduction of the project**
 - 1.1 Preface
 - 1.1 Site location
 - 1.2 The process of the project formulation
- 2. Natural conditions**
 - 2.1 Meteorological and hydrological conditions
 - 2.2 Topographical conditions
 - 2.3 Geological conditions
- 3. Alternatives of project size and the basic parameters**
 - 3.1 Alternatives of the project
 - 3.2 Preliminary option, size and basic parameters
- 4. Preliminary assessment of environmental impact(s)**
 - 4.1 Description of environmental conditions in the project area
 - 4.2 Preliminary assessment of environmental impact(s)
 - 4.3 Measures for the site preparation and resettlement
- 5. Basic project technical measures**

(Specific for MHP, Solar, Wind, Biomass, etc.)

 - 5.1 Plant
 - 5.2 Auxiliaries
 - 5.3 Electric network and connection
 - 5.4 Access roads to the site
- 6. Project implementing organisation**
 - 6.1 Project formulation
 - 6.2 Project preparation
 - 6.3 Project implementation
 - 6.4 Construction schedule
- 7. Total investment and financial, economic indicators**
 - 7.1 Total investment
 - 7.2 Financial and economic indicators
- 8. Conclusions and Proposals**
 - 8.1 Project benefit
 - 8.2 Implementing works
 - 8.3 Proposals

APPENDIX 3

PROPOSED CONTENTS FOR THE INVESTMENT PROJECT REPORT (Feasibility Study Report)

1. Chapter 1. Overview

- 1.1 Introduction
- 1.2 The history of the project formulation
- 1.3 Approach to the project
- 1.4 Basic characteristics of the project
 - Annexes
 - Pictures and drawings

2. Chapter 2. Natural conditions

- 2.1 Meteorological and hydrological conditions
- 2.2 Topographical conditions
- 2.3 Geological conditions
 - Annexes
 - Drawings

3. Chapter 3. Options for size and basic parameters

- 3.1 Introduction
- 3.2 Bases for option
- 3.3 Alternatives for consideration
- 3.4 Preliminary option
- 3.5 Basic parameters
- 3.6 The option for installed capacity
 - Annexes
 - Drawings

4. Chapter 4. Environmental Impact Assessment

- 4.1 Description of environmental conditions in the project area
- 4.2 Preliminary Environmental Impact Assessment
- 4.3 Measures for site preparation/ resettlement
 - Drawings

5. Chapter 5. Technological and construction measures

- 5.1 Project layout of the selected alternative
- 5.2 Technology solution
- 5.3 Access roads to the project site
 - Annexes and Drawings

6. Chapter 6. Electric and electrical connection measures

- 6.1 Option for electric connection
- 6.2 Option for generator
- 6.3 Electrical network scheme
- 6.4 Measurement – Control – Protection
- 6.5 Lightning protection and earth connection
- 6.6 Communication
 - Drawings

7. Chapter 7. Construction organization

- 7.1 Construction layout
- 7.2 Equipment and material supply sources and quantity
- 7.3 Infrastructures for construction (electricity, water, roads, tents...)
- 7.4 Construction measures

- 7.5 Construction schedule
Drawings

8. Chapter 8. Total Investment and major Financial - Economic Indicators

- 8.1 Total Investment
- 8.2 Economic Analysis (including Socio-Economic impact analysis)
- 8.3 Financial Analysis
- 8.4 Conclusion(s)
Annexes: Total Investment

9. Chapter 9. Conclusions and Proposals

- 9.1 Basic indexes of the project
- 9.2 The benefits of the project
- 9.3 The next steps
- 9.4 The proposals

APPENDIX 4

PROPOSED CONTENTS FOR THE BASIC DESIGN REPORT

Volume	Content	Remark
Volume 1	General description	
	Natural conditions	
Volume 2	Power line option – size and the basic parameters	
	Electrical and mechanical equipments	
	Operational regime and management	
Volume 3	Environment impact assessment	
Volume 4	Construction measures	
	Construction organization	
Volume 5	Total cost	
	Drawings	

Specific topic		
Topic 1	Electric network and connection – construction technical design	
Topic 2	Access roads - construction technical design	If necessary
Topic 3	Fire protection design	
Topic 4	Project for land clearance and compensation	
Topic 5	Project for resettlement	If necessary
Summary report		

APPENDIX 5
NECESSARY LICENCES/ MEMORANDA/ AGREEMENTS

No	Subject	Activities	Output
1	Land use	<ul style="list-style-type: none"> - The Project Developer submits PPC the required documents as determined by law for requesting a Licence of Land use - PPC considers the request and issues Licence 	A Land allotment Certification (with tax exemption for the case of RE off grid projects) is issued.
2	Natural resource use	<ul style="list-style-type: none"> - The Project Developer submits PPC the required documents as determined by law for requesting a Licence of Natural Resource use (exclusively for MHP projects) - PPC considers the request and issues a Guideline of water use 	A Guideline of water use (share between MHP and other needs) is issued
3	Land clearance	<ul style="list-style-type: none"> - DPC and Commune PC have the duty of land clearance for the approved project; - The Project Developer should cooperate closely with the local PCs to deal with the job 	MOU of Handing over the cleared land for the project layout
4	Resettlement and compensation	<p>If re-settlement is required:</p> <ul style="list-style-type: none"> - The Project Developer prepares a report on resettlement plan, estimates the rate and total cost for compensation and submit it to DPC (c/c to Commune PC); - District and Commune PC assess the request , conclude Agreement on Resettlement and Compensation, determine the land for building new resettlement areas; <p>The obligation of implementing resettlement (building infrastructures in the new residential place, evacuation of households from the project area, stabilisation of new life etc), in principle is included in the scope of land clearance. However, on a case by case, these aspects are subject to agreement between People Committees and Project Developer, including the contribution of expenses for resettlement and compensation.</p>	<ul style="list-style-type: none"> - Agreement of Resettlement and Compensation - Implementation of the resettlement plan
5	Environment protection	<ul style="list-style-type: none"> - The Project Developer prepares a report of EIA and submit it to DONRE with the relevant legal documents, requesting for an Environmental Permission (if necessary); - Official Paper of EIA Report Adoption (suitable mostly to RE off grid projects) 	DONRE issues a Paper of EIA Report Adoption for the project
6	Budget arrangement	<p>Financial arrangement should be sufficient for the total project investment;</p> <p>Part of a project investment will be granted to the project by ODA and other donors via governmental channels. The Vietnamese side (central and local governments) contributes a counterpart to be agreed with each donor (by cash and in kind, from the annual budget or from public mobilisation etc.).</p>	Agreements on Financial arrangement with relevant co-financers
7	Licence for construction	<ul style="list-style-type: none"> - Prior to starting construction works, the Project Developer submits the required documents (according to the Construction Law) to DPC and requests for a Construction Licence - DPC issues the Licence 	Licence for Construction is issued by DPC. (It's not required for small projects in the remote mountainous areas)
8	MOU of PPA	The Project Developer should conclude a MOU with consumers on power purchasing from the beginning of the Project Preparation Stage through Commune PC or CEU which is established for linking the Project Developer and the public).	MOU on power purchase

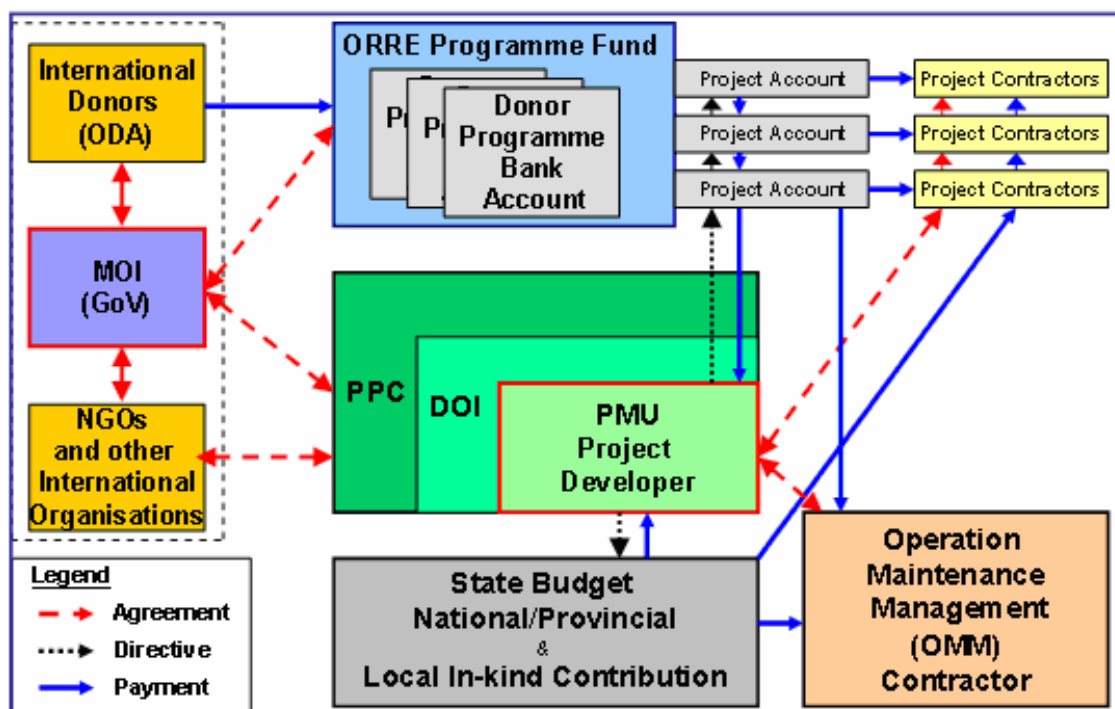
APPENDIX 6.
OBTAINING FINANCIAL COMMITMENT (*)

Subject	Activities	Done by	Output
Find potential financial contributors	<ol style="list-style-type: none"> Analysing objectives, conditions of financial sources; Finding the potential financial sources; Creating an appropriate FSM for co-financing. 	MOIT	Find out suitable financial sources and FSM arrangement
Getting General Commitment Letters of financial contribution	<ol style="list-style-type: none"> Meeting representatives of potential financial co-financers; Describe or present the main financial characteristics of the project; Getting Letters of Intention. 	MOIT, Donors	General Commitment Letters of donors to contribute the investment capital to the project. These documents should be attached to the FS Report
Agreement on financial contributions	<ol style="list-style-type: none"> Present project costs to potential financial partners Establishing the shareholding structure if it is necessary Recalculation of main financial indicators Informing financiers and concluding the Agreements on investment contribution 	Economic/ Financial Experts of the Project Developer	<ul style="list-style-type: none"> - Agreements are signed. - Financial mechanism is established and ready for operation. (**)

Note: (*) For detailed information, see “Finance Service Model for the Renewable off-grid projects”, VSRE - Hanoi, 2007 [18].

(**) These activities should be completed before starting the “Project Implementation” stage.

An example of Finance Service Model
CO-FINANCING OF RE OFF-GRID PROJECTS WITH STATE OWNERSHIP



APPENDIX 7

EPC PROCUREMENT AND CONTRACTING FOR RENEWABLE ENERGY OFF-GRID PROJECTS

Step	Activities/ Contents	Done by	Submitted to	Approved by
Bidding Preparation	Preparation of Bidding Plan	Project Developer (+ consultants)	PPC	PPC
	Preparation of Bidding Invitation Dossier	Project Developer	PPC	PPC
	Inviting Tenderers	Project Developer	Send to tenderers and published in Procurement website and Newspapers	N/A
Tender round	Issue Bidding Invitation Dossier	Project Developer	N/A	N/A
	Site visiting (if necessary)	Project Developer, Tenderers	N/A	N/A
	Bid preparation	Tenderers	Project Developer	N/A
	Bid Receiving	Project Developer	N/A	N/A
	Bid Opening	Project Developer, Tenderers	N/A	N/A
Appraisal and approval of bidding winner	Evaluation of bids (on technical, economic and other aspects according to Bidding Invitation Dossier)	Project Developer (+ consultants)	N/A	N/A
	Bid selection (including the process of bid clarification)	Project Developer (+ consultants)	N/A	N/A
	Report on Bidding results and Approve Bid Selection	Project Developer (+ consultants)	PPC	PPC
	Contract negotiation	Project Developer and Bidder	N/A	N/A
	Contract Approval	Project Developer	PPC	PPC
	Contract signing	Project Developer and Bidder	N/A	N/A

Note: PMU will contract the service of a consulting organization for performing jobs. The selection of consultant should also be done according to the Law of Procurement.

APPENDIX 8

An example for

FINANCIAL DISBURSEMENT OF CO-FINANCING PROJECTS USING ODA SOURCES

Subject	Activities	Done by	Output
Financial Disbursement	<ol style="list-style-type: none"> 1. MOIT transfer the ODA part of the investment to the separate Project account opened by the Project Developer (PMU) in provinces at a selected Bank; 2. PPC plans and takes decision on local contribution in the years of the project implementation. Ask for subsidy from the central government if necessary. 3. The Bank advances the Developer a certain amount for starting the job according to an agreement of PPC (the <i>Local Coordinator</i>). 4. Disbursement for each item of expenditure is based on the volume of work completed by the contractors. It must be certified by supervisors (for purchasing equipment, construction, installation etc). 5. The amount of work that is agreed to be paid by in-kind contribution is managed by the PMU with the local District People Committee 	<p>MOIT, Bank</p> <p>Developer (PMU)</p>	<ul style="list-style-type: none"> - ODA capital is transferred to the project account at the Bank branch in provinces. - Counterpart of Vietnamese side (by cash and in kind) is available - Report of taking over of a volume of completed work and estimation of its value is certified by the Project Developer and Contractor and shown to the Bank and/ or Treasury House. - Developer requests the Bank and/ or Treasury House to disburse the appropriate amount to the Contractor. - Bank and/ or Treasury House disburses the required amount to the contractors - In-kind contribution will be mobilized based on the request from the contractors and certified by the PMU
Monitoring the Disbursement	<ol style="list-style-type: none"> 1. The <i>Local Project Coordinator</i> (PPC) in collaboration with the Bank, and the Treasury House controls the disbursement from the Developer during the process of project implementation. 2. The contractor must complete a final balance-sheet and submit it to the <i>Project Developer</i> (PMU) not later than 15 days after project commissioning. 3. The Project Developer approves the balance-sheet and disburses the last payments to the contractors. 4. The Project Coordinators (MOIT/ PPC) and ODA Donors will organize a financial audit if it is necessary, 5. The Project Coordinators/ financial co-funders can request an ad-hoc financial audit at any time during the project implementation if necessary. 	<p>Contractor, PMU</p> <p>MOIT, PPC and Financial Contributors,</p>	<p>Monitoring financial disbursement</p> <p>Balance-sheet approved.</p> <p>Auditing conducted</p>

REFERENCES

- [1]. **Electricity Law** No. 28/2004/QH11, approved by the Eleventh National Assembly in December 03, 2004 and came into force on July 1, 2005.
- [2]. **Law of Investment** No. 59/2005/QH11 promulgated by the Eleventh National Assembly in November 29, 2005
- [3]. **Law of Construction** No. 16/2003/QH11, approved by the Eleventh National Assembly in November 26, 2003.
- [4]. **Governmental Decree No. 16/2005/ND-CP** on the Management of Investment Projects, dated in February 07, 1005.
- [5]. **Governmental Decree No. 112/2006/ND-CP** on amending some articles of Decree No. 16/2005/ND-CP.
- [6]. **Law of Procurement** No. 61/2005/QH11, approved by the Eleventh National Assembly in November 29, 2005.
- [7]. **Governmental Decree No. 111/2006/ND-CP** on the guidelines for implementing the Law of Procurement and selecting construction bidder according the Law of Construction, dated in November 29, 2006.
- [8]. **Law of State Budget** No. 01/2002/QH11, approved by the Eleventh National Assembly in December 16, 2002.
- [9]. **Governmental Decree No. 131/2006/ND-CP** on the mechanism for management and use of the Official Development Assistance sources, dated November 09, 2006.
- [10]. **The Renewable Law** of the People's Republic of China, 2003.
- [11]. World Bank, *Renewable Energy for Rural Economic Development Project - Operational Manual*, 2004.
- [12]. World Bank, *Operational Manual*, 1999-2005.
- [13]. Ministry of Energy and Mineral Resources (Indonesia), *Policy on Renewable Energy Development and Energy Conservation (Green Energy)*, Jakarta December 2003.
- [14]. Forest Research Institute of Malaysia, *Renewable Energy in Malaysia: a Policy analysis*, Koh Mok Pok and Hoi Why Kong, Kuala Lumpur 2002.
- [15]. Electricity Generating Authority of Thailand (EGAT), *Purchase Price for Power Supply by Small Power Producers with contract Using Renewable Energy*, 2001.
- [16]. World Bank, *Financial Incentives for Renewable Energy Development*, 1997.
- [17]. NEPO/ DANCED, *Recommendation for Thailand's Renewable Energy Policy Incentives*, 1998.
- [18]. Vietnam-Sweden Rural Energy Programme, *Mobilising Investment for Renewable Rural Electrification – Report on Development of Financing Service Models*, Hanoi 2007.
- [19]. Vietnam-Sweden Rural Energy Programme, *Institutional Models for off-grid Renewable Energy Projects – Review, Analysis and Recommendations*, Hanoi 2007.
- [20]. Vietnam-Sweden Rural Energy Programme, *Proposal of Working Procedures for the Preparation and Assessment of Plans for District Renewable Energy Off-grid Electrification*, Hanoi 2006.
- [21]. Vietnam-Sweden Rural Energy Programme, *Proposal of Working Procedures for the Preparation and Assessment of Rural Off-grid Electrification Projects*, Hanoi 2006.
- [22]. Vietnam-Sweden Rural Energy Programme, *Tools and Method for the Preparation of District Renewable Energy Off-grid Planning*, Hanoi 2007.
- [23]. Vietnam-Sweden Rural Energy Programme, *Tools and Method for the Preparation and Assessment of Renewable Energy Off-grid Power Projects*, Hanoi 2007.

