

**FINAL DRAFT**

**PREPARATION PHASE**

**PROJECT DOCUMENT**

**FOR**

**PROGRAMME AREA 3:  
“MOBILISING INVESTMENTS FOR RENEWABLE RURAL  
ELECTRIFICATION”**

**PROJECT DOCUMENT FOR PROGRAMME AREA 3**

“Mobilising Investments for Renewable Rural Electrification”

Final Draft  
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## ACRONYMS AND ABBREVIATIONS

BICC	Building and Infrastructure Construction Company
BIDV	Bank for Investment and Development
CDM	Clean Development Mechanism
DAF	Development Assistance Fund
DOI	Provincial Department of Industry
ESMAP	Energy Sector Management Assistance Programme
EVN	Electricity of Vietnam
GEF	Global Environmental Facility
GOV	Government of Vietnam
IA	Implementing Agent
KW	kilowatt
kWh	kilowatt-hour
MOI	Ministry of Industry
MOF	Ministry of Finance
MPI	Ministry of Planning and Investment
MV	Medium voltage, usually 6 –35 kV
MW	Megawatt = 1,000 kW
MWh	Megawatt hour = 1,000 kWh
NGO	Non-governmental organisation
ODA	Official Development Assistance
O&M	Operation and maintenance
PCF	Peoples Credit Fund
PMB	Programme Management Board
PMU	Programme Management Unit
ROSCA	Rotating Saving and Credit Association
PPC	Provincial Peoples Committee
RE	Rural Electrification
REAP	Renewable Energy Action Plan
SIDA	Swedish International Development Agency
UNDP	United Nation Development Programme
VBARD	Vietnam Bank for Agriculture and Rural Development
VBSP	Vietnam Bank for Social Policies
VND	Vietnamese Dong
VSRE	Vietnam-Sweden Rural Energy Programme
VWU	Vietnamese Women's Union

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## 1 BACKGROUND

### 1.1 Introduction, Objective, Approach and Methodology

#### Introduction

July 5, 2004, Ministry of Industry, Vietnam and SIDA signed the contract with Carl Bro International and Entec as Programme Consultant to the Vietnam – Sweden Rural Energy Programme 2003 – 2008 (VSRE). The services delivered by the consultant are divided into two phases:

- A one year Preparation Phase and
- An Implementation Phase.

The Preparation Phase shall specify the activities and the expected outcome from the Programme Consultant beyond the description in the Project Document. The programme is implemented in the Ministry of Industry, Vietnam, and the two provinces: Ha Giang and Quang Nam.

The role of the consultants, Carl Bro, Entec and the Vietnamese consultants are strictly advisory and supportive. The responsibility for the project preparation and implementation rests with MOI and the Implementing Agents (IA).

The Programme includes 6 Programme areas and four of these are included in the contract. These four Programme Areas are:

- Area 1: Strengthening the Implementation Capacity of Renewable Energy Policies
- Area 2: Technical Standards for Rural Electrification/Electricity Networks
- Area 3: Mobilising Investments for Renewable Rural Electrification
- Area 4: Institutional Models for Community Service Provision and Appropriate Regulations

#### Objectives

The Project Document for VSRE defines the overall objective: “The rural population of Vietnam has increased access to options for rural energy services, which are reliable, affordable and sustainable”. The specific objective for area 3 is to overcome key financial barriers to accelerated growth in rural electrification based on renewable energy sources.

ToR for implementation of all four areas was prepared for the contract signing.

This detailed Project Document for Area 3 is prepared on the basis of these ToRs, and the Contract Document attached to the Contract.

#### Approach and methodology

The project document is prepared in the autumn 2004 based on meetings with the relevant ministries and other stakeholders in Hanoi and with local authorities and other relevant stakeholders in the two selected provinces: Ha Giang and Quang Nam. In both provinces all relevant stakeholders have been visited and their involvement in the project has been discussed. At Logical Framework Approach workshops in both provinces, the problems have been analysed and solutions discussed. During the LFA workshops the approach in the project document was

discussed and adjusted according to comments received and the implementation plan was discussed.

To achieve the overall objective the proposed approach favours demand-side considerations to reflect the actual needs of the beneficiaries of improved access to electricity. These needs will be considered within the overall context of community life. Electricity supply is seen as integrated with other improvement efforts relating to water supply, health care, education, agriculture, transportation, and telecommunication and income generation. Energy is not a goal but a measure to increase social and economic development in an environmental friendly way.

The approach will be implemented based on current policies, actual surveys, organisation of workshops, studying international experience, assessment of actual situation, thus proposing solutions to overcome financial barriers in order to implement rural electrification based on renewable energy.

According to the State policy on rural socio-economic development, strategy on hunger eradication & poverty alleviation and according to the farmer households' demand of electricity supply, in the overall context of community life, energy and renewable energy are not goals in themselves, but means to increase social and economic development in an environmental friendly way. The electricity supply would be seen as integrated with other improvement efforts relating to water supply, health care, education, transportation, telecommunication and income generation.

To achieve the specific objectives, the project will focus on diversifying the mobilization of capital sources for rural electrification such as: Central government budget, local budgets, international financing organizations, investors' (enterprises') capital, banks and credit institutions, lending organizations and farmer households having demands on electricity services. To ensure the sustainability of the project, in addition to the study of mobilization of funds, the project will also focus on proposals of uses and management of loans, thus ensuring the capability of debt payment, income increase, and living standard improvement of the energy users.

## 1.2 General about country and sector policy

### General

Vietnam is located in South-eastern Asia bordering China, Laos and Cambodia as well as the Gulf of Thailand, Gulf of Tonkin and South China Sea. The country has a total area of 329,560 sq km and a population of 82.7 million (July 2004 est.). The terrain is low flat delta in south and north, central highlands and hilly, mountainous in far north and northwest with the highest point Fan Si Pan 3,144 m. The country is extended 1,650 km from north to south but only 50 km across at its narrowest point.

Vietnam can be described as a poor, densely populated country that is in the process of recovering from many years of warfare. Substantial progress was achieved from 1986 to 1996 with growth rates at an average around 9% per year. Growth then fell somewhat in 1998 and 1999 and again rose in the following years to 6 to 7 % in 2002 and reached nearly 7.7% in 2004 even against the background of global recession. The estimated purchasing power parity (2003) is USD 2,500 GDP-per capita in 2004. The contribution to GDP from the economic sectors are: 24% from agriculture, forestry, and fishery, 40% from industry-construction (hereof 20.32% from processing

industry), and 38% from the service sector. All in all 42.3 million persons are employed, hereof agriculture, forestry and fishery employ 57.9%, industry and construction employ 17.4%, and the services sector employ 24.7%<sup>1</sup>.

### **Energy sector**

Ministry of Industry (MOI), Electricity of Vietnam (EVN) is the responsible entity for the electricity industry in the country. MOI is responsible for energy policy and planning. EVN is a state owned utility responsible for production, distribution and supply of electricity.

Within EVN there are 7 regional power companies (PC), mainly, PC 1 in the North, PC 2 in the South and PC 3 in the Central, are the PCs involved in rural electrification. In several provinces electricity distribution companies exist at provincial and district level.

### **Rural Electrification**

EVN and its subsidiaries are making substantial progress in rural electrification. In 2000 more than 80% of the communes (7,245) and more than 70% of rural households (9.3 million) had electricity service from the grid. By the end of June 2004, 98.12% of the numbers of districts across the country were provided with electricity via national grid, 93.99% of the total numbers of communes and 83.3% of the total numbers of households living in rural areas were connected to low voltage network for daily life purpose.

Government of Vietnam is making a major effort to provide all households with electricity services before 2020. EVN will connect all commune centres to the grid before 2010 but many remote and poor villages will not be electrified until after 2010. Electrification projects in the remote and poor areas are very seldom profitable – at least for a long period – and therefore there is an expectation among stakeholders that it should be an obligation for GOV to provide electricity services also to these areas.

In October 2004, EVN published a plan for 2010 targeting 90% of the communes.

Responsible for implementing rural electrification is as follows:

1. MOI manages overall planning, provides guidance and supervises implementation.
2. MPI and MOF are preparing an annual investment plan.
3. MOF defines State Budget, mobilises and provides concession credits for large-scale projects.
4. Provincial People's Committees prepare investment plans for small-scale projects and manage rural electrification programmes in their territories.
5. State Bank instructs commercial banks to provide concession loans for poorest households based on a government guarantee for the borrower.

<sup>1</sup> Report on Vietnamese Economy 2004; Central Institute of Economic Management; Scientific and Technical Publishing House; Reference Book

### Renewable Energy Action Plan

In 2001 the Ministry of Industry and the World Bank, together with EVN presented the Renewable Energy Action Plan. The objective of the Renewable Energy Action Plan (REAP) is that renewable energy will provide electricity for economic and social development in remote areas. The success in reaching the objective will be measured by the following indicators:

- The number of renewable electricity systems operated by households and institutions.
- The number of isolated grids installed with renewable electricity, the number of households served and the MWh generated and sold in such grids.
- Electricity use per household with renewable electricity.
- Productive usage of electricity in communities with isolated grids.
- The number of renewable electricity facilities selling electricity to the grid and the MWh sold.

The GOV will carry out a 10-year programme that will enable large-scale supply of clean, reliable electricity from renewable energy to rural communes. Priority will be given to providing energy services in poorer isolated communes and villages, with particular attention to supporting productive uses and social development through electricity services.

The REAP will be carried out in two phases, an institutional and capacity building phase and an implementation phase, each about five years long. The total cost of the programme is estimated to be USD 46-91 million in the first phase. The result would be provision of electricity to 35,000-90,000 households, and installation and operation of 41-50 MW of renewable electricity.

The REAP will focus on three markets for renewable energy: individual and institutional consumers that will use stand alone systems; communities that could benefit from isolated grids; and supply to the national grid. The REAP have five main components:

- Renewable Energy Policy and Institutional Development
- Individual Households/Institutional Systems
- Community Isolated Hydro Grids
- Grid-connected Renewable Electricity
- Technology/Market Development and Resource Assessment

### System Efficiency Improvement, Equitisation and Renewable Energy – SEIER – Project

The World Bank supports REAP through the SEIER project, which has been formally endorsed by the WB for the period 2002-2004. The SEIER project has two subcomponents that are related to the present project. The subcomponent: Community based hybrid renewable energy grids, includes a Remote Area Renewable Electrification (RARE) pilot programme. RARE will provide technical assistance and a grant of up to 80% of the capital cost of the renewable energy generating stations to be established in around 20 rural communes. The subcomponent: Strengthening regulations, planning and implementation capacity for Renewable Energy Projects in MOI, will support establishment of a renewable energy programme, support small suppliers of electricity based on renewable energy, and support development of a market for renewable energy technology.

The second phase of the World Bank-financed Rural Energy project - *Rural Energy 2* – has just been approved. Implementation is scheduled for 2005. The total budget is US\$ 300 million, of which the World Bank will finance US\$ 220 million. Rural Energy 2 will be implemented in 30-35 provinces, and comprises the following four components:

- Rehabilitation of the existing distribution network in 1,000 communes
- Connection of 200 new communes to the grid
- Expansion of the RARE program (see above) in 100 communes
- Strengthening of management competence and capacity in rural areas and in the provinces.

### **Clean Development Mechanism**

Vietnam has ratified the Kyoto Protocol and is eligible to participate in the Clean Development Mechanism. The Ministry of Nature, Resources and Environment is appointed as Designated National Authority. With the modalities for CDM agreed upon during the conference of the parties in Marrakech (Marrakech Accords) minor projects can be bundled to reduce the transaction costs and thus make it more attractive to utilise the mechanism.

### **The Financial sector**

The Government of Vietnam has many preferential policies encouraging the development of agriculture and rural areas, and has many national target programs funded by the Central Government Budget such as: the Hunger Eradication, Poverty Alleviation and Employment Creation; the social and economic development program for communes having extreme difficulties, the program for development of education, health care, culture.

The Rural Electrification Program based on renewable energy is also one of the contents of merit to benefit from the above mentioned preferential financing policies and national target programs. Besides, there are also many institutions involved in the credit activities.

Numerous institutions are involved in credit activities. Apart from state-owned and private banks that lend money to enterprises and households, many Government agencies are involved in credit activities through their role as managers of targeted programmes. Organisations like Woman's Union, the Veterans' Union, and the Farmers Association serve as credit advisors and guarantors for their members. Some cooperatives provide credit to households.

The formal financial sector includes the state owned commercial banks, joint stock banks, foreign banks and joint venture banks, people's credit funds, financial lease companies and the Development Assistance Fund.

There are four large state owned commercial banks: The Foreign Trade Bank of Vietnam (Vietcombank), the Industry and Commerce Bank of Vietnam (Incombank), the Bank for Investment and Development of Vietnam (BIDV) and the Vietnam Bank for Agricultural and Rural Development (VBARD).

VBARD is the largest in terms of legal capital and has a rather wide scope of operations. VBARD has international relations and has received finance funded by international financial institutions and have received and implemented more than 50 foreign development projects. In addition VBARD has carried out credit programmes with broader socio-economic perspective and objectives as stipulated by the government.

There are 47 joint stock commercial banks in Vietnam of which 31 are urban and the remaining are rural.

The Development Assistance Fund is a state owned financial institution to mobilise medium and long-term finance.

There are 15 branches of foreign banks and 4 joint-venture banks. In addition there are 62 representative offices from 20 nations operating in Vietnam. The market share of foreign banks is increasing sharply.

The informal credit institutions are: moneylenders, tontines (rotating credit and saving associations), loans from relatives and friend, and trader credit.

### **Quang Nam Province**

Quang Nam Province is located in the middle of the country. Its natural area is nearly 11,000 Sq. km with a population of nearly 1.4 million. The districts in the highland are characterised by mountainous forest covered land, poorly developed infrastructure and a poverty rate of almost 50%. The population is made up of Kinh people as well as ethnic minority groups whose main production form is shifting cultivation combined with growing of cinnamon trees as a cash crop. In general the education and health level is low. The districts at lower altitude and closer to the coast have easier access to the market and education and health conditions are better. The agricultural production is characterised mainly by rice cultivation, gardening and animal husbandry. In the coastal zone infrastructure is more developed and market access is easier.

Around 288,000 households in the province are connected to the national electricity grid and 600 are connected to an isolated grid at Tan Hiep Island. Almost 27,000 households have still no access to power. Most of these households are located in the highland.

The economy of Quang Nam is based mainly on agriculture and forestry production and efficient use of land in production and a clear identification of land used for developing non-agriculture economy in rural areas have high priority in provincial development policy. In the past years the government has invested in rural development by building roads and extending electricity supply as well as the health and education facilities in rural areas. Major achievements include that 1200 kilometres of rural roads have been built and 82 % of households now have access to electricity compared with just 6% five years ago.

In Quang Nam the Development Assistance Fund is extended its activities in supporting al minor infrastructure projects.

### Ha Giang Province

Ha Giang is a large sparsely populated province on the Chinese border with a total population of some 650,000 people or 110,000 households in 190 communes and 1,500 villages. Around 70,000 households are connected to the national electricity grid and around 11,000 households are connected to isolated electricity systems, powered mainly by hydro power plants. The remaining households have no access to power. Many of those are situated far from the grid.

Ha Giang lies near to the bottom of the national human index ranking. Provincial development policies and plans reflect the prime importance of infrastructure and pro-poor services. The prevailing farm size is 1 to 1.5 ha, with less than 0.25 ha per family of terraced or watered land. Paddy, maize and root crops dominate the farming system but may not always be sufficient to meet household basic food needs. Livestock is important as a financial reserve and a source of food and cash income.

A number on poverty alleviation initiatives are ongoing in Ha Giang. In 2004 IFAD evaluated the Ha Giang Development Project for Ethnic Minorities. The project was a 6 year project started in 1997 and funded by an IFAD loan, a UNDP grant, a SIDA grant and contribution from the Government of Vietnam. Ministry of Planning and Investment was the responsible for the implementation of the project at the national level while the accountability at the province levels lay with the Provincial Peoples Committee, a provincial project steering committee and a provincial project coordination unit. At the district level District Peoples Committees are the prime movers in planning and implementation. The Commune Peoples Committee was involved in planning and oversight of project interventions mainly through the Commune Development Board, a special entity set up by the project principally to manage the Commune Development Fund (CDF). The introduction of the CDF in 2001 enhanced community participation. CDF has spread from 10 to 78 communes all with poverty rates of over 30%. Emphasis of CDF activities has been on infrastructure and income diversification i.e. supply of farming inputs, particularly improved seeds, forestry and herbal plants and technology transfer models. One of the recommendations from the project is that the CDF approach should be used as the main plank for determination of project activity across the technical sectors for any follow-up intervention.

In 2003 the SIDA-funded Chia Se programme started in Ha Giang and two other provinces. Chia Se supports the decentralisation process in Vietnam. A key feature of the programme is the provision of a Local Development Fund (LDF) that allows communities at village level to handle funds at their own discretion, based on their own participatory planning and prioritising of activities.

There is a long tradition in Ha Giang for channelling funds to infrastructure projects through commune or local Development Funds and the legal and institutional framework is established for these funds in a number of districts.

### 1.3 Problem analysis

**Problems identified**

During the LFA workshops representatives from Quang Nam and Ha Giang provinces reported that the revenues from electricity services from minor isolated grids would not cover the cost of operating and maintaining the system and indeed not cover the investment or a return on the investment. An example was mentioned, that a 10 kW micro power plant supplying 100 households with each 10 kWh per month would generate revenue of 700,000 VND per month with the present tariff of 700 VND per kWh. This revenue would not even cover the salary of the staff of two necessary to operate the plant.

The poor financial prospects are caused by the relatively high investment cost related to the small scale and the remote location, and the low revenue from electricity sales primarily for lighting.

The following four potential sources for financing were identified: The consumers, the investor (which normally would be the legal entity responsible for electricity supply to the consumers in the service area), banks, and government. The workshops commented as follows on the sources:

The consumers themselves will not be able to establish the necessary funds for investment from their low income. It was reported that the consumers only have little saving and that this saving is to secure basic needs.

The legal entity that is responsible for electricity supply will normally be a public or semi public entity that receives fund from public budget. It is not realistic to expect private capital to invest in a project that hardly can cover operating and maintenance costs.

The Vietnamese commercial banks shall operate under commercial conditions and therefore want to secure their loans. Lenders must present feasibility studies and business plan to show the profitability of a project and the bank will normally demand collateral or a guarantee.

The conclusion from the workshops was that minor isolated grids could only be developed under a firm subsidy scheme.

Below is a more comprehensive assessment of each of the sources based on available studies.

**Consumers**

Rural electrification only makes financial sense in areas where there is already a demand for electricity using services such as lighting, motive power serving the development of agricultural production, or television. In the absence of grid supply these services are obtained by spending money on kerosene, LPC, dry-cell batteries, and car battery recharging, which are all very expensive per unit of electricity supplied.

In Vietnam the government regulates the price of electricity supplied from the grid and the tariff for households is 700 VND per kWh. A household in the remote areas consumes around 20 kWh per month, but the monthly payment are often between

30,000 and 40,000 VND per month which indicates that some consumers pay more than 700 VND per kWh to cover the costs of supplying these consumers i.e. large investment in distribution lines and losses in the system. In some places connection to the grid is included in the tariff but in most cases households have to pay a one-time fee of around 140,000 VND to be connected. In general the arrears are few but PC subsidises the electricity bill for poor households. In Ha Giang poor households in average receive around 7,000 VND per month as subsidy to pay electricity bill.

There are different opinions on poor households' willingness to loan money and to save.

Mekong Economics has presented a study "Access to Resources", Hanoi, 2004 that shows that 75% of rural households have received some form of credit. 70% of the loans came from the formal sector with 40% from VBARD. A very common reason for not having access to formal credit is the complicated lending procedures exceeding people's knowledge level, and the lack of valuable collateral. Therefore, poor households who cannot offer assets as collateral for formal loans have to rely on informal moneylenders and carry the burden of higher interest rates. The study concludes that the main reason for an ongoing strong informal sector is that there is a demand for credit among households that are not assessed credit-worthy by the formal institutions.

Banks and credit institutions are generally not keen on lending to farmer households because of high risks, low profits, and high managerial cost, as loans often are divided into many small parts.

There are several micro-finance institutions operating in the rural areas of Vietnam and the experience shows that there are differences in the target groups and design of the product they are marketing. Some micro-finance institutions have rather stringent eligibility rules while others are open for access by lenders and activities. Only few micro-finance institutions have developed saving facilities. It seems to be a general point of view that poor households are unable to save and credit therefore is the only financial measure to promote rural livelihoods. Recent field studies in the Northern Vietnam, undertaken by University of Hohenheim, have shown that there is a market for micro-saving services.

A survey in 6 communes<sup>2</sup> made for the Rural Energy Study, May 2000 shows that household in rural areas in general has a preference for energy use for productive purposes i.e. water pumping. Water to irrigate the crops was perceived by many as an extremely important activity, and directly profitable (they were prepared to pay more than 4 MVND for a pump). In order to elaborate on the commitment to achieving energy services the survey asked people whether they were prepared to take a loan to get the selected service (i.e. water pump). Approximately 80% of respondents would like to seek credit. The amount people thought they would be able to pay monthly would be somewhere in the range of 100,000 – 300,000 VND.

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<sup>2</sup> Dak Lao, Dak Sak, Thuan Hanh, Quang Than, Quang Khe and Dak, all in the Dak Lak provincen

## Investors

In general rural electrification is not the sort of investment that is going to attract private investors looking for somewhere to maximise their return. Private developers mostly invest in electrification for their own productive uses (tea plantations in Sri Lanka is a good example) and then provide domestic electricity to the local community.

In Quang Nam and Ha Giang a number of cooperatives operate hydro plants connected to the grid and some commune and district PCs own minor hydro plants. Financial sources are in most cases raised through Provincial and Commune Peoples Committees but there are examples in Quang Nam that a cooperative has made investment in micro hydro using its own resources. The main objective for this investment was to provide electricity for productive use in the cooperative.

Now all suppliers of electricity services have to be licensed and suppliers that do not comply with the requirements shall hand over management to licensed companies. In Quang Nam the Building and Infrastructure Construction Company (BICC) is licensed and will take over management from a number of minor PC owned systems. In general licensed distribution companies are not interested in servicing remote areas because of the ceiling tariff that do not cover the costs of supplying remote consumers.

## The financial sector

Commercial Banks: Provides capital to projects on the list of projects designated by the Government. The entities implementing these projects are entitled to preferential interest rate. The difference between the commercial interest rates and the preferential rates is covered by the State Bank (State Budget). This form of capital is often applied to the major projects having significance in supporting the development of agriculture and rural areas, and being related to hunger eradication & poverty alleviation.

Vietnam Bank for Agriculture and Rural Development (VBARD) was established in 1988. Its capital is composed of: Equity, fund from the state budget, loans from international financing organizations, and loans from foreign countries. The bank may mobilize funds by paying interest rate 1% higher than the common interest rate on savings, in order to provide capital to important government agricultural development programs. By 2004, VBARD had more than 2.300 subsidiaries across the country. Thanks to its network, VBARD was able to access 99% of the total 12.000 communes in Vietnam. At present, VBARD has extended its credit relations to about 6 million households (excluding more than 2 million poor households) which account for 50% of the total numbers of farmer households across the country. The outstanding loans extended to farmer households up to September 30<sup>th</sup>, 2004 were about 90,000 billion VND. In particular, VBARD has supplied a considerable amount of capital to households doing large scale farming economy (more than 1,000 billion VND), provided 3,783 billion VND of loans for the construction of infrastructures such as electricity facilities, irrigation system, and dwelling houses<sup>3</sup>.

<sup>3</sup> *Special Issue of Banking Journal, 2004 and Banking Journal, February 2005*

According to the Report of the Director General of VBARD, Mr. Le Van So<sup>4</sup>, the total capital stock of VBARD, by December 31, 2004 was 159,629 billion VND. Outstanding loans provided to the economy was 142,294 billion VND by December 31, 2004, of which loans channelled to State owned enterprises accounted for 16.7%; outstanding loans borrowed by business entities of non-State sector amounted to 21.1%. In particular, rural small and medium business entities posted 11.6%. In 2004, VBARD received more 7 new projects with the total capital of USD 363 million which increased the number of projects being received and implemented by December 31, 2004 to 77 projects valued at USD 2,783 million. The amount of capital channelled through VBARD was USD 2,012 million, of which USD 788 million had already been disbursed.

In order to strengthen the financial capacity of commercial banks, the Government provided VBARD with additional capital by which the prescribed capital of VBARD amounted to 4,490 billion VND at the end of 2004.

Special features in the provision of the loans by VBARD for farmer households are as follows:

- Operating according to commercial principles: VBARD has mobilized resources for providing loans and charged real positive interests (the difference between interest charged on loans and the interest paid on borrowed resources was about 0.4%/month).
- Making loans directly and through groups and/or teams. VBARD paid bridging commissions to groups and teams.
- Being strongly supported by authorities and social organizations in rural areas. Thanks to this support, VBARD has acquired a strong profile of debt repayments by borrowers.

The Bank for Investment and Development of Vietnam (BIDV) was established in 1957 and has more than 200 branches and sub-branches. BIDV has been focussing primarily on medium and long term projects, financing to state-owned enterprises and reserves preferential loans for key economic groups.

Vietnam Bank for Social Policies (VBSP)/Vietnam Bank for the Poor was established in 1995 but reorganised in 1999. The average size of loans are 3, million VND with an average length of 21 months and most of the loans require a guarantor, who is usually from the Commune People's Committee, the Farmer's Union or the Vietnamese Women's Union. VBSP is located in the same buildings as VBARD and managed by the same staff both at province and district level. The loans are disbursed through the community joint-responsibility groups-borrowing groups; loan interests are monthly collected.

VBSP follows the Ministry of Labour, Invalids and Social Affairs (MOLISA) current classification of poverty stricken households and tries to access poor household and guide them to form borrower groups. Borrower groups consist of maximum fifty members, including one group leader who receives 0.1% of total interest paid by the

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<sup>4</sup> *Banking Journal, February 2005*

group. It is commune leaders from the commune people's committees who make the basic selection of the households qualifying for loans.

The Peoples Credit Funds System (PCF) was established under the rural finance programme in 1994. The people credit Funds system composes of 3 levels: The Central People Credit Funds, the Regional People Credit Funds, and the Grassroots People Credit Funds.

The Central People Credit Funds is a Focal Funds which regulates the funds of PCF, receives funds from the government and from the local as well as foreign non-government institutions, creating fund sources to loan to Grassroots' People Credit Funds; and the latter will give loans to their members. The Regional People Credit Funds are intermediary Credit Funds, regulating loans among Grassroots' People Credit Funds, receive funds from Central People Credit Funds or send back to the latter their exceeded funds.

The People Credit Funds mainly serve the agricultural and rural economic development. Being close to the customers creates understanding and trust. The credit funds provide simple, quick and timely transaction procedures, small scales, compact manageable, and conforming to people's level of knowledge. The funds are of low expenses, easily to attract idle money from individuals and organizations for lending to their members. The funds members deposit their money or borrow money from the funds. Mainly based on the credit-guaranteed basis, therefore they have easy access to the funds.

PCF is present in most provinces with a number of almost 1,000 PCF in total. The total number of members exceeds 600,000. Founding members of a PCF have to buy shares amounting to VND 3,333 million per person, which can be paid back in instalments over a number of years. The loans are small loans mainly geared toward production. Only goods are accepted as collateral – not land use rights.

The Development Assistance Fund (DAF) was established in 1999 to implement the State preferential credit policies in order to assist development investment, through preferential lending forms in terms of interest rate, and lending terms (period). DAF receives funds from State Budget, from Government bonds issuance and ODA borrowing of the Government used for on lending. DAF supports projects qualified for prioritised investment under the Law on Domestic Investment Encouragement with:

- Loans for investment
- After investment interest rate subsidy, and
- Investment credit guarantee.

In general the formal credit institutions in Quang Nam and Ha Giang have no experience with financing isolated electricity systems and there is a need for capacity building regarding this kind of technologies.

Informal lending/micro financing comprises private moneylenders, relatives and local rotating savings and credit associations (ROSCA or Ho/Hui). The main reason for an ongoing strong informal sector is that there is a demand for credit among households that are not assessed credit-worthy by the formal institutions. Generally

moneylenders are wealthy individuals who on lend their funds. Their clients are households who need short-term capital for productive purposes and poor households who need money to cope with emergencies. Loans can be made in both cash and kind and the specific terms of the contract such as interest rate and duration depend on the relationship between lender and borrower but average interest rate is assumed to be 5% per month. A tontine (Ho/Hui or Rotating Savings and Credit Association (Rosca)) consists of a group of people, which on a regular basis each provides a certain amount into a Rosca pool and this pool is sequentially allocated to each of the members. Rosca members usually rely on a combination of informal sanctions/reputation and the limited mobility of the members.

Loans from friends and relatives are still the most important source of credit for rural households. This kind of financial assistance is given without incurring interest payments.

Table 1. Overview of Financial Institutions.

	Presence	Loan Size	Term	Comments
VBARD	District	10 million		
BIDV	Provincial		Medium	Pref. loan
VBSP	District	3 million		
PCF	Provincial			Shares
DAF	Provincial		Long	Pref. loan
Informal	Local	Small	Short	

### Public financing

There are ongoing reforms of public financing and a revised State Budget Law has just been adopted. That affects public financing of electrification projects in two ways. The first is the decentralisation of public spending providing local governments a higher role in making decisions on local budget allocation. The second is the attempt to mobilise other financial sources to supplement public finances for electrification projects.

Based on provisions of the State Budget Law ministries at the central level decide allocation norms of their own ministries and agencies to their subordinate units. The allocation to the local level follows in principle the same procedure. State investment for development is allocated with focus on key national targets, which among others give priority to socio-economic infrastructure in the Central Highland and the North-western regions. Infrastructure forms a key target area in the Hunger Eradication and Poverty Reduction Programme (HEPR) and in the national Programme for Socio-economic Development in Communes in Especially Difficult Circumstances (Programme 135). GOV has the goal to provide essential infrastructure services to 75% of poor communes by 2005 and to 100% of poor communes by 2010. "Essential infrastructure" refers to the eight components included in Programme 135: basic road access, schools, health centres, clean drinking water systems, electrification, markets, post and irrigation. Ministry of Labour Invalids and Social Affairs (MOLISA) are now preparing the National Targeted Programme on Poverty Reduction (NTPR) for the period 2006-2010.

Based on the fact that the demand for development investment exceeds the supply, GOV has encourages mobilisation of other sources to replace public financing. Among other interventions GOV issues government bonds for financing in for instance transportation infrastructure. Provincial authorities use a number of incentives to attract investors like tax breaks (corporate and value-added tax), cheap credits and low land rental prices. According to Decree No. 45/2001/ND-CP “On Electricity Activities and Usage”, Hanoi, August 2001, Project owner of local power network can obtain favourable loans with low interest rate under the Law on Incentives for Domestic Investment. These loans are disbursed by DAF.

At present there is no permanent subsidy scheme for electrification of remote areas. The impressive efforts undertaken by EVN to electrify rural areas during the last years are financed by EVN budget and thus a cross subsidy from urban households to rural households. However EVN are reluctant to use more of their financial resources to electrify areas that are not financial viable and will cause losses for EVN. On the provincial level there are subsidy schemes to attract private investors. These schemes comprise tax holidays and low price or rent for land use and are used mostly to attract investments to industrial zones. There are no examples in Quang Nam or Ha Giang that these kinds of subsidies are attractive for investors in rural electrification.

#### **Other finance**

VSRE is promoting renewable energy technologies, which opens for the possibility to achieve financing from international sources such as the Global Environmental Facility and the Clean Development Mechanism.

#### Global Environmental Facility

GEF is an independent financial organisation that provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. Any eligible individual or group may propose a project, which must meet two key criteria: It must reflect national or regional priorities and have the support of the country or countries involved, and it must improve the global environment or advance the prospect of reducing risks to it. GEF project ideas may be proposed directly to UNDP, UNEP, or the World Bank.

#### Clean Development Mechanism

The Kyoto Protocol, which was adopted by the United Nations Framework Conference to Combat Climate Change (UNFCCC) in 1997, provides a mechanism (Clean Development Mechanism) for a government or company in an industrialised country to implement projects that reduce emissions in developing countries in return for Certified Emission Reductions (CER), and assist the host country in achieving sustainable development. CDM focus on projects that reduce emissions. The CDM is expected to generate investment in developing countries, especially from the private sector, and promote the transfer of environmentally friendly technologies to the developing countries. CDM projects must have the approval of the host country government. The overall framework of the mechanism was designed during the conference of the parties in Marrakech but the practical application of the CDM is still under development. According to modalities and procedures for the CDM renewable energy project activities with a maximum output capacity equivalent of up to 15 MW can be approved under simplified modalities to reduce the transaction cost and

mobilise financing also for minor projects. The modalities allow for bundling and MOI could be the institution that bundles the projects and propose them for CDM.

#### Donor financing

There are a number of donor financed electrification projects in remote areas in Vietnam. Some of these projects are financed through a grant but most of the projects are financed through a combination of concession loans and community participation (in kind or in cash).

#### **Problem tree**

During the LFA workshops in Quang Nam November 3-4, 2004 and in Ha Giang November 9-10, 2004, the following problem tree was identified.

The majority of electricity household consumers are poor, with low level of education, low saving capacity, less informed about financing services, less access to credit institutions, unable to effectively manage business and to save funds to repay loans, to, and not having assets for credit collateral

The potential investors in rural renewable energy technologies are not keen on providing capital for investments that are, high risk investments, with low return, long payback period. Such investments do not attract investors that consider profits as main objective.

#### The banks, credit institutions, financing institutions

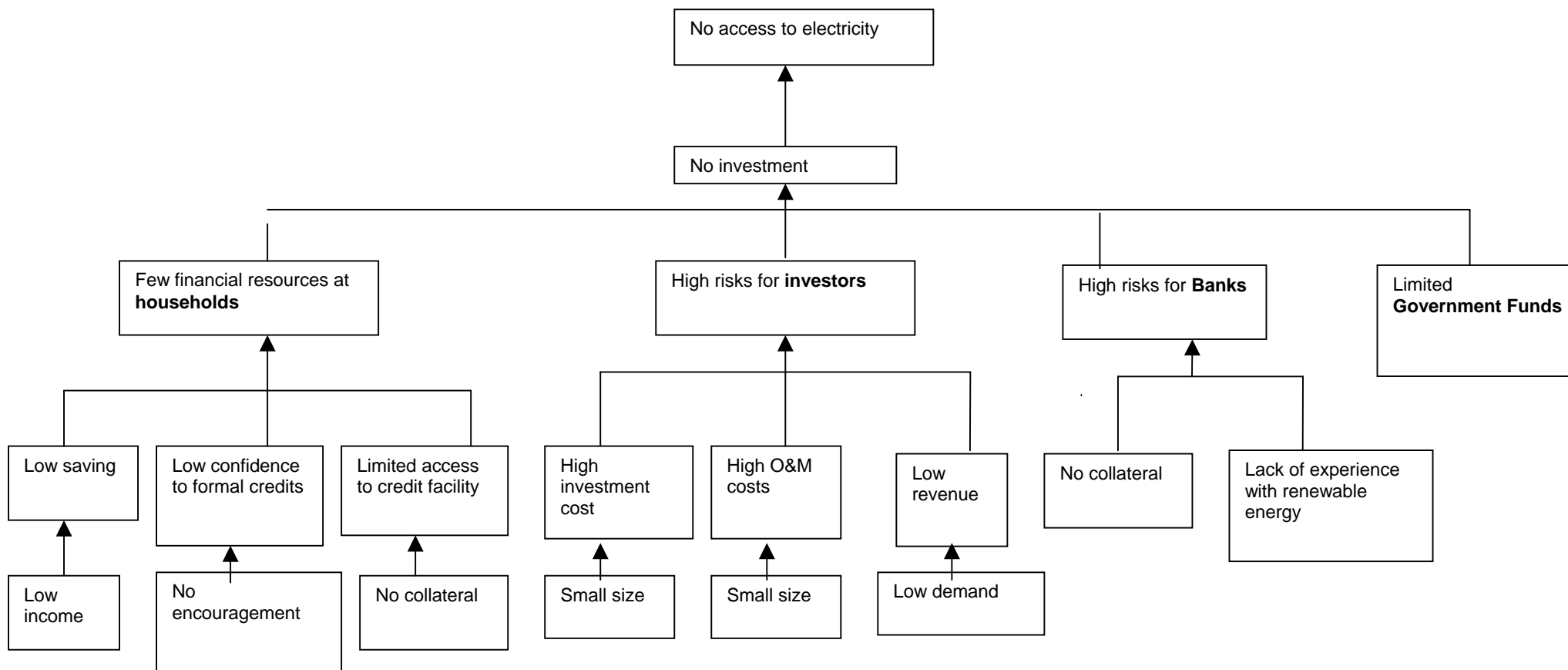
The majority of banks, credit institutions do their business with the aim of profit, but giving loans to investment on rural renewable energy technologies is high risk, with complicated management, high managerial cost, low profits; at the same time, they have less experience in giving loans to this kind of projects; besides, many customers want to borrow money but do not have collateral assets and consequently not attracting the banks and credit institutions.

The central Government has a clear policy that whenever possible, financing for electricity projects should be mobilised from sources outside the government.

The central Government budget and local budgets are limited, but are still having many spending tasks aiming at social and economic development for the whole country as well as for each locality. Moreover, the government has less experience in attracting funds from international organizations so as to finance the projects on rural electrification, based on renewable energy, in an environmental friendly way. Rural electrification based on renewable energy is still new; therefore the existing legal framework for regulating this issue is not sufficient.

To sum up: The households, as the end user, face a major barrier that they have limited access to credit facilities. The private investors find the relation between expected risk and expected profit to be unacceptable to them. The banks need to build up capacity to assess renewable energy projects. The Government must see renewable energy as a mean to increase social and economic development in rural areas in an environmental friendly way.

**Problem Tree**



### Major challenges

The problem analysis has identified a number of barriers for sufficient investments in rural electrification. The core barriers are that governmental financial resources are limited and no private investors can take over as long as the projects are not profitable.

VSRE will introduce a financing model based on the diversification of fund sources for the project: government financing, international organizations financing, capital from investors, credit institutions and consumers.

Experience from past and ongoing projects show that electrification projects in remote areas will need financial support. The challenges are to:

1. To make a project attractive to sources of financing, when the projects is not generating a profit.
2. Provide the financial support in a way that stimulates managers of the electricity systems to deliver electricity services cost efficiently
3. To give farmers access to credit sources, can make full use of opportunities that this services gives increase the production and business development, and income creation, to improve social and economic welfare.

The financing model must be applicable for different technologies i.e. micro hydro as wind, solar systems, and biomass. Investors in micro hydro that sell electricity to consumers need access to financing and consumers need access to loans to be able to cover the cost of connecting to the grid. Suppliers of solar home systems need capital to establish the necessary sales and service network and the consumers need financing to buy the system.

It will be very difficult to attract commercial loans unless there is a secured return on the loan, which requires collateral or guarantee. Capital that is not risk adverse (venture capital) is normally expensive capital. Investors that take risks demand a high return on their investment. Capital that are willing to take risks and at the same time demands a low return on investment will be governmental sources and ODA. These sources seek other objectives than the pure commercial objective of receiving a high return on the investment. GOV and ODA address poverty alleviation and can provide financial sources at reasonable terms when the sources contribute to social and economic development or contribute to mitigate environmental degradation.

To meet the *first challenge*, which is to make a non-profitable project attractive for these sources, the electrification project must be:

- Supportive to social and economic development
- Based on renewable energy sources
- Providing spin-off benefits such as strengthening local saving and credit markets.

Commercial banks find that renewable energy projects in remote areas are Greenfield investments with a high risk and loans from the commercial banks therefore will be very expensive. However, the involvement of commercial banks, especially VBARD and Bank for Social Policies is important to meet *the second challenge* of stimulating cost efficient management. With contribution from donors

and government channelled through to a fund, this fund could enter into agreements with local commercial banks to on-lend to project developers on a low interest rate on the basis of:

- The Fund will assist in obtaining a lower interest rate after investment.
- Guarantee of investment credit.
- Giving loans, or together with the investors, to contribute funds for implementation of rural electrification projects.

Because of the high risk, there is a need of training to enhance the staff of the fund operational level and capability, supervising and guidance to customers aiming at helping to use the loan effectively. At the same time, it is necessary to stimulate banks to effectively manage projects.

A direct contribution from consumers would further stimulate the interest from the commercial banks and at the same time meet *the third challenge* to stimulate consumers to utilise the opportunities that access to electricity services to serve production and business development, increase income and improve social and economic welfare.

### International experience

UNDP and WB have in December 2004 published a summary of lessons from successful programmes – Rural Electrification in the Developing World: A Summary of Lessons from Successful Programmes by Douglas Barnes and Gerald Foley.

In most successful rural electrification programmes, a substantial portion of the capital has been obtained at concessionary rates or in the form of grants. But experience shows that concessionary loans should not be provided to organisations, which are not covering their operating and maintenance costs. Cost recovery is the single most important factor determining the long-term effectiveness of rural electrification programmes.

Table 2. Financing rural electrification in selected developing countries

Country	Executing agency	Financing
Costa Rica	Cooperatives	40 years concession loans to the cooperatives with a grace period of 10 years at an interest rate of 1-2.5% Communes were required to come up with part of capital costs
Philippines	Cooperatives	Concession loan
Bangladesh	Cooperatives	Concession loan
Thailand	Public Company	Blending of commercial and concession loans Some contribution from rural communities.
Mexico	Public Company	Social Development Funds allocated by a planning and development committee
Tunisia	Public Company	Financing shared between consumers, company and government

China	Decentralised Company	Financing a blend from central government, provincial government, district government, banks and individual villagers
Chile	Decentralised Company	A Subsidy Fund paid part of the costs

### Grants and Subsidies.

In principle grants and subsidies can be given for the investments or the production. The receivers of grants and subsidies could be the consumer, the investor, or the supplier of investment goods.

The investment grants given to the goods provider and the investor will lower the capital costs of the project, thus able to provide services at a lower tariff. The incentives of providing grants for the investment costs are to make investments happen. By lowering the investment, from the investor's point of view, the decision on implementing the investment involves lower financial risks and therefore the decision should be easier. When lowering the capital costs of the investor, the selling prices of the product could be lower compared with a full cost investment, thus making more projects financial viable.

Whether to give the grant to the investor or to the supplier of goods depends on the level of competition on the market. If one or few suppliers the grant to suppliers might not be fully reflected in their selling prices. Using grants to the suppliers could also be used to promote domestic production of renewable energy technologies, or having foreign companies to establish production facilities in Vietnam.

To stimulate the production and the continuous production from the facilities, subsidy based on the production could be used. The incentive is to keep the facilities in good condition and to produce the most. In isolated grids this also provides an incentive to promote the use of electricity for productive use, as this will increase the level of capacity utilisation and release the subsidy.

Experience in Europe shows that when introducing new technology, the most efficient instrument is investment grant. When technologies have proved themselves, the most efficient instrument is subsidising production.

When using grants for investments, the level of subsidies is irreversible, and some projects might be too attractive. When subsidising production the level of subsidy can be adjusted over time. A variety of instruments can be introduced to control the level of subsidies. Among these is maximum level of profitability, based on regulated selling prices. However controlling to that detail is costly for the authorities. By regulating ownership of facilities, that could secure that surpluses becomes benefits for the intended organisations and people.

The subsidising rural energy projects in Vietnam seen so far, is based on grants for investments either from public sources or grants provided by ODA funds. The investments made in isolated grids consist of production facilities, distribution facilities, and finally consumer connections. All of the elements are important but without consumer connection no turnover will materialise for the supplier. This makes the payment of the consumer connections a central issue, which must be dealt with

to comply with the preferences of the consumers in question. If the consumer desires are not properly addressed, the operation of the grid and the supply is endangered.

### Financing models for rural energy projects in Vietnam

In the traditional **ESCO model** the Service Provider (the Energy Service Company) is the core agent who carries the financial risk. The Service Provider identifies and makes a contract with a Consumer, buys the equipment from the Equipment Supplier who installs the equipment at the consumer's premises (or wherever the Service Provider demands). The Service Provider pays the full cost for the equipment plus a (monthly) service fee to the Equipment Provider. The Consumer pays a monthly electricity charge to the Service Provider. The Service Provider gets a loan from a Financial Provider (Bank) and pays back the loan with a monthly interest rate. There are a number of variations to this model. In many cases the consumer pays a share of the system costs and the Government provides a guarantee, a preferential loan or a grant to reduce the repayment and interest costs. The Service Provider is responsible for marketing the product and manages the system to make sure that the services are provided and the charges paid. The Equipment Provider delivers the equipment and regular service. The Finance Provider provides the necessary loans to the Service Provider.

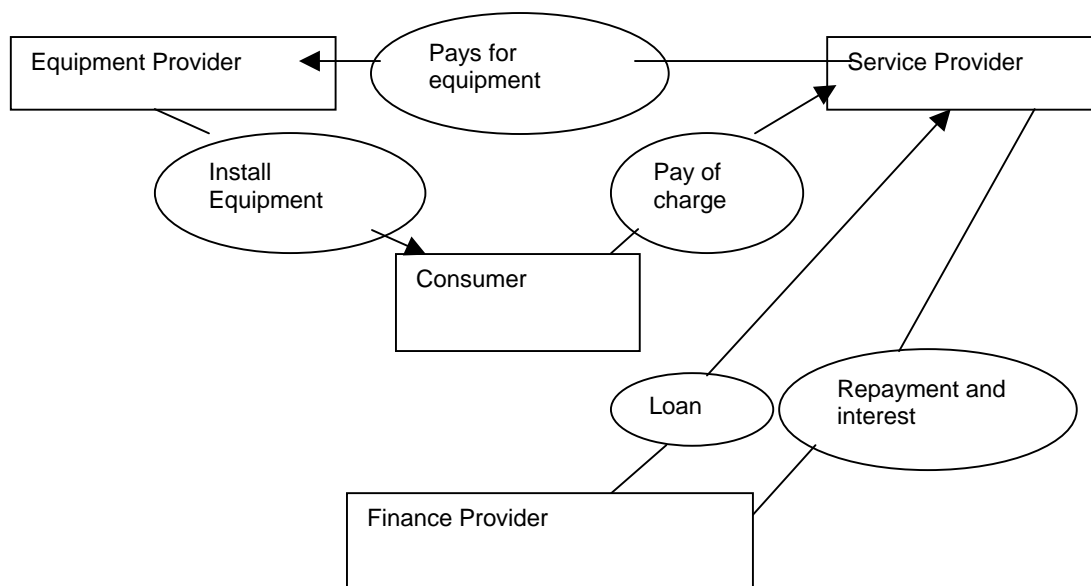


Figure 1. . ESCO model

This model is widely used for installation of solar home systems where systems are installed at the consumer premises. The model has its strengths and weaknesses depending on the scale of equipment and the creditworthiness of the Service provider. The system is very efficient when consumers are committed, able and willing to pay and the service provider has high management capabilities and high creditworthiness. There are several examples the model failing because the consumers failed to pay. To avoid these problems Vietnamese Women's Union

(VWU) together with the Equipment Provider SELCO and the Finance Provider VBARD has developed a variant of the ESCO model. In this **VWU model** the Service Provider still is responsible for marketing and management but the Consumer buys the equipment directly from the Equipment Provider and pays 25% of the system costs in cash and receives a loan from VBARD for the remaining 75%. If a consumer fails to pay back the loan with a monthly interest rate, the Service Provider will cancel the contract and find a new consumer to take over the equipment. The risk for the loan to the consumer is covered partly by the Equipment Provider through a security deposit and partly by IFC/GEF through a guarantee. This variant has shown to be efficient because the agents are focussing on their core competences. The Service Provider works directly with the consumers and motivation of households and the pay back ratio has been very high. The Equipment Provider has the technical expertise and involves local people in providing repair and service. The Finance Provider provides loans and accepts IFC/GEF financing as collateral for the loan. For Solar Home Systems the risk is spread on a number of consumers and the model will not be ruined when a few customers fail to pay. A determined Service Provider can find substitutes in the village or in another village included in the programme.

The experience from micro-hydro schemes in Vietnam shows that it has been difficult to establish a common sustainable finance model like the one used by VWU for SHS. Although the total investment in a village may be the same, there is not the same flexibility to handle non-payers and therefore the investment will be seen as a higher risk investment. Equipment Providers are not willing to take any risk when they deliver equipment unless they can get a guarantee from a creditworthy institution or person. The Service Provider will have to be identified on a case-by-case basis unless it will be possible to identify a Service Provider on a province level who has the ability to market the project locally and motivate households. The Finance Providers will only give loans if they can receive collateral.

**Example of local micro hydro option (JICA study report, Hanoi 2002):**

Budget for 5 kW Micro Hydro for 100 households:

Civil works	US\$ 2,500
Turbine/generator	US\$ 3,000
Mini-grid	US\$ 3,500
VAT/margin	US\$ 1,000
Total	US\$10,000

Cost allocation: 50% subsidy by government  
50% credit by VBARD

Tariff  
Electricity price (700 VND/kWh)  
Battery Charge (3000 VND/charge)

Cash flow over 20 years:

Revenue: Total	238 million VND
Expenses: Repayment	75 million VND
Interest (6%):	62 million VND
Salary:	72 million VND
Maintenance:	29 million VND
Total:	238 million VND

The JICA project illustrates this situation. The investment cost to supply 100 households with electricity from a 5 kW micro hydro plants was 100 USD per household. A 50 Wp Solar Home System providing the household with the same service would cost around 350 USD. Due to the excellent natural conditions in the area micro-hydro is the least cost solution for providing energy services. Even with a preferential loan from VBARD it was not only to finance the investment unless the Government provided an upfront grant of 50% of the investment. With this grant, the Service Provider could deliver electricity at a price of 700 VND per kWh.

Under the RARE programme the local authorities should provide a major contribution as a grant to make the projects feasible.

### Applying Financial Models

Financing rural electrification in general, and for remote areas in particular, is facing the position that investments are not attractive for investors who has profitability as main objective. Further, access to loans is limited for the direct beneficiaries of the investment. International experience shows that subsidising is necessary. The main questions are:

- How large the share of subsidy should be?
- How it should be mobilised and disbursed?
- How should the remaining sources be mobilised and from whom?

To answer these questions, the applied financial model should be designed for “the State and the people join hands to implement”. The central Government partly assists and the remaining should be mobilized from communities, localities and the

beneficiaries. The central State Budget and budgets of local government will give funds and preferential credit loans to enterprises and farmer households, specifically aiming at:

- To attract investment capital from enterprises for electricity supply based on renewable energy, it is necessary to share risks, to reduce cost, thus giving reasonable profit. To do that, following solutions are needed: Beside the funds owned by enterprises themselves, they would be entitled to receive preferential loans from banks and credit institutions, especially from VBARD and Social Policy Bank. Investors and electricity consumers may join hands to contribute fund to enterprises in return of interest sharing (consumers in need of money may access to credit loan from banks, credit institutions, informal credit market or from non-financial organizations. Consumers and enterprises will receive financial support from a proposed Fund to be elaborated later).
- The investors who invest in rural electrification project are entitled to tax exemption or grace period, especially in great poor areas.
- Commercial banks can contribute to the investment through diversifying forms of lending that are corresponding to the features of agricultural production, and to the debt paying capability of the borrowers, such as: Pay in instalments, lending with collateral based on the assets created by given loans, financial leasing, or lending through mass organizations borrowing and saving groups. Preferential lending to rural electrification project, based on renewable energy, from banks and credit institutions should be integrated and given priority aiming at support to the implementation of the national target program of hunger eradication and poverty alleviation and employment creation. When bad debts occur, it should not immediately apply distraint measures, but should allow to postpone payment, extend period of payment, continue to give loans, or to help farmers recover efficient production.
- The Farmers Association, the Women Union could establish borrowing and saving groups. These groups could mobilize contributed funds from their member's savings or would help members to borrow money from credit institutions with guarantee given by them. The Groups define clearly guaranteed liability of group leader, farmer associations, and women union. The guarantors have responsibility to collect the loans and pay back to the credit institutions, monthly, seasonally. Credit institutions may allow to use assets created by given loans as collateral for borrowing.
- Funds could be established at provincial levels, and be a supplement to existing funds in order to support to the implementation of the project. Financial sources for establishment of funds compose of:
  - Supported fund from central government budget, local budgets. These support sources will be given priority when examining the distribution of resources to the ministerial/local investment and development plans and the National target programs.
  - Financial sources from local and foreign individuals and organizations.
  - Funds mobilized from communities

The Fund will be used for following purposes:

- 
- Interest rate support (difference between common interest rate and preferential one).
  - Guarantee of investment credit
  - Giving loans or join hands with investors in contribution of funds.

MOI could be the entity that can bundle a number of minor projects and thus improve the access to ODA and other global resources that are supporting transfer of renewable energy technologies to developing countries (GEF and CDM). The sources could be disbursed through the Fund.

### **Capacity building of institutions**

The Fund could be hosted by the provincial branches of the Development Assistance Fund (in Quang Nam), who has expertise in disbursement of favourable loans under the Law of Incentives for Domestic Investment, or at a one of the existing Funds established under the poverty alleviation programmes (in Ha Giang).

However, investment in isolated grids will be a new business area for DAF and the existing funds and it may be necessary to supplement their present capacity to screen this kind of feasibility studies and business plans.

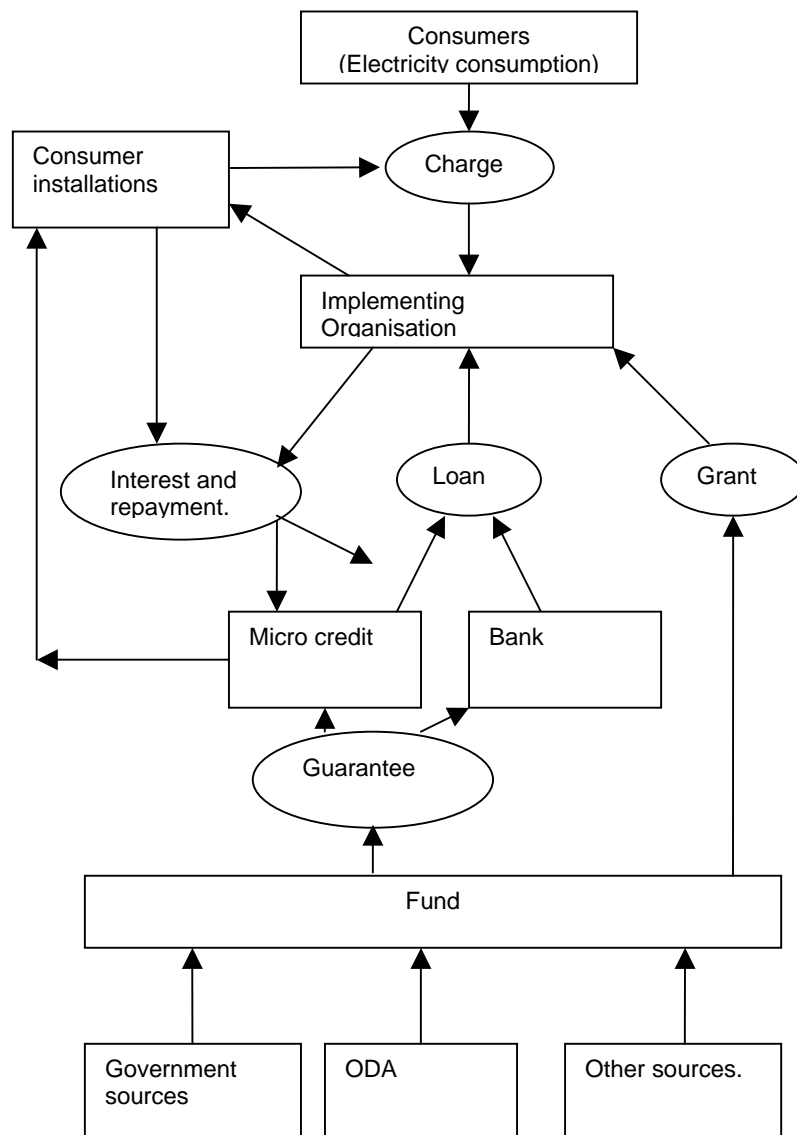
MOI acts as a partner who directly access to international funds and apply for aids from donors, therefore there is also a need of capability building for its staff relating to mobilization of funds for the project

The commercial banks will be in a similar situation and also here supplementary capacity building will be necessary.

The micro-finance institutions have to be mobilised as an important institution that can link the household involvement in the electrification project with other activities taking place in the village.

### **Elements in financing models**

The figure below shows elements of a financial model, which will form the basis for the models proposed for renewable rural electrification in Vietnam. Based on the feasibility studies of the pilot projects different packages will be analysed to identify the share of equity, subsidy and loan as well as the conditions for typical projects.



The figure above shows elements of a model. The Fund receives means from different sources and in the figure it is assumed to be from development organisations and the Government of Vietnam. Other sources could be private organisations such as NGOs, developments organisations, private companies, etc. The received funds could be as grants, soft loans, and loans.

The Fund uses its resources to issue guaranties and grand's in a mix determined by the financial commitments of the Fund in terms of maintenance of loans and other costs.

The fund can provide grants to the Implementing Organisation, the organisation making the investment.

The Implementing Organisation receives a mix of loans and grants, ideally determined by the need established in the feasibility study. The consumers are receiving grants and loans from Micro Credit entities for the installations if decided that the consumer is to pay directly for these costs. The consumer installations could also be provided by the Implementing Organisation. The tariff structure will reflect the financing whether the consumer installations are paid by the consumer or not.

A variety of ways of dealing with the consumer installations are available and these include mixing loans and grants and fully or partly inclusion of costs in the tariff, but it all depends on the preferences of the consumers in question. As electricity supply will be an additional thing to pay for the consumers, it might have to prove its worth. These few assumptions alone, show that this issue is indeed a sensitive issue that requires thorough analyses to satisfy the desires of the population on the individual sites.

### **Preconditions**

The electrification projects must be integrated with the implementation of the plans for social and economic development in the areas and of the National target programs. Electricity for productive use will increase the productivity and quality of production and at the same time improves the financial viability of the electricity project. Generation for productive use improves the load curve and thus the revenue from electricity sales.

Coordination with EVN on their plans for extension of the national grid will also be important. A comprehensive plan for utilisation of electricity in the social and economic development must be coordinated with EVNs plans to electrify communes (under the Rural Energy 2 programme). A comprehensive planning and coordination during the implementation of the electrification plans and the plans for social and economic development will be undertaken during Project Area 1 and will be a precondition for a successful outcome from this Project Area 3.

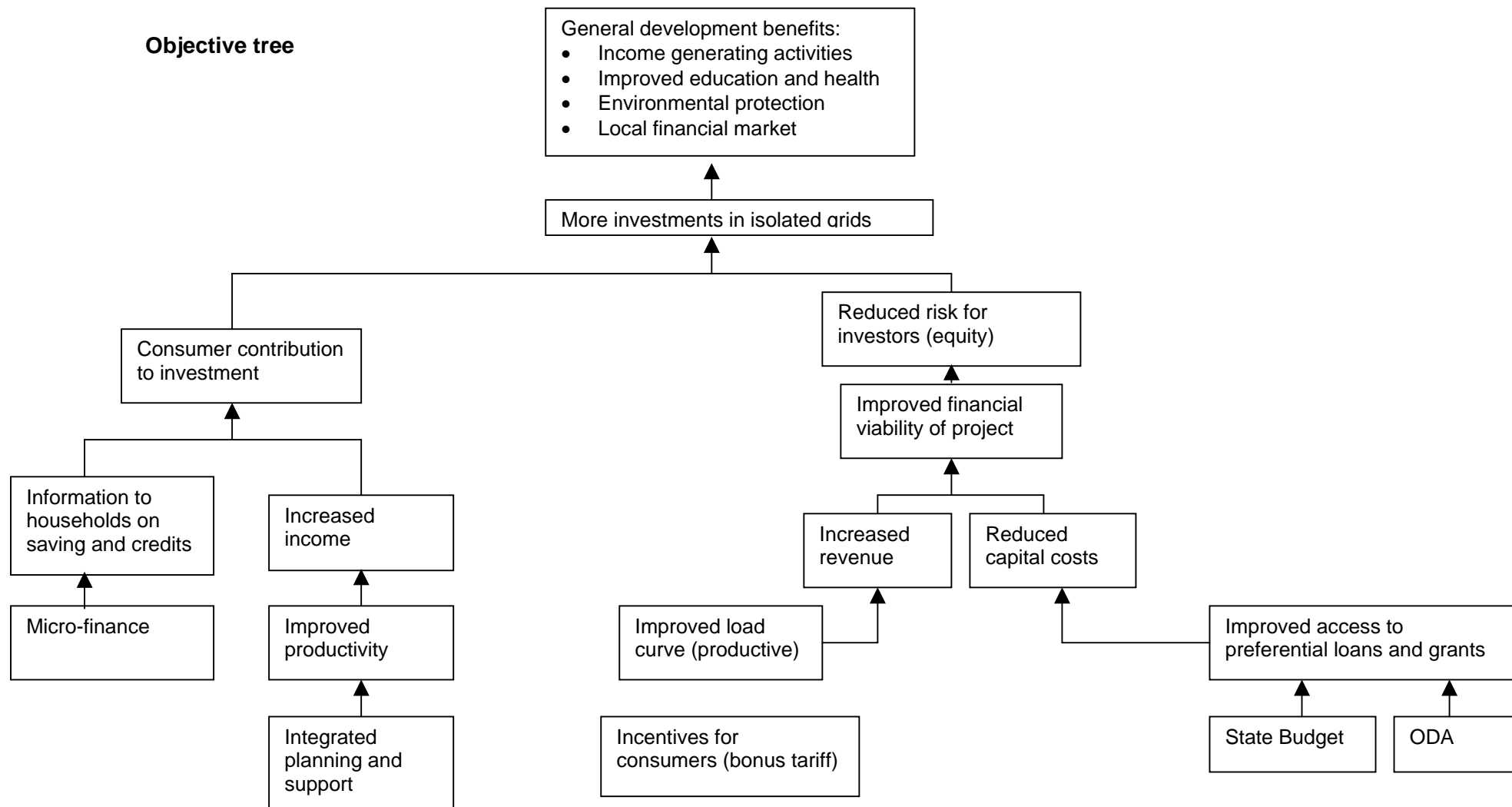
A willingness from Provincial and State Authorities to contribute to the establishment of the Fund will also be a precondition for a successful outcome.

Beside the assistance given to the farmer households eligible to electricity supply, the creation of employment by giving guidance to use electricity for production and business development, economic development, is a basic condition that ensures sufficient income for covering all costs.

Enhancing development could be supported by information centres providing information about financial services, assistance to production and business development, assistance to training of science, technology, enhancing managerial/directing capability, guidance for formulation and implementation of effective production and business projects. Through relevant authorities, the government assists farmer households to display, introduce, advertise their products, helping them favourably sell their products by means of organization of exhibition, establishment of rural markets. The institutions, financiers, organisations that are involved, could co-finance the Centres.

Regarding poor areas far from the national electricity grid, where households suffer great hardship, the government assists with a part of cost for erection of low voltage line, lines connecting to individual household as well as in house wiring.

**Objective tree**



## 1.4 Identification of target groups

There are a number of stakeholders who have an interest in the VSRE. The final beneficiaries are the rural population (consumers) in Quang Nam and Ha Giang who will have increased access to electricity. In project area 3 these final beneficiaries will be addressed through a number of institutions who will benefit directly as involved in the project as the target groups. These groups are

- the authorities presented by MOI at the central level and DOI at province level
- The formal and informal financial institutions, primarily at the province level but also at the local level.
- private investors

### Consumers

A successful electrification in rural areas in general and in remote areas in particular, will depend on the involvement of the consumers in these areas. It is necessary that consumers have a clear understanding that electrification is a means to not only enhance social welfare but also economic welfare by supporting productive activities. With a motivation and introduction of incentives the consumers can contribute to improve the financial viability of a project. By contributing with a share of the investment the financing costs will be reduced and by contributing to a better load the revenue will be secured.

To ensure that the electrification also will contribute to increase income the consumers should be encouraged to use electricity for productive use. Access to a credit and deposit accounts in a local financial institution will be an important condition for the consumer contribution.

### Authorities

The Provincial Department of industry (PDOI) is responsible for preparation of a renewable energy plan for the province and for cooperation with other relevant department. PDOI will coordinate the planning of electrification with EVN to ensure consistency in the implementation of Government policy.

Ministry of Industry (MOI) will be overall responsible for the implementation of the government policy to provide all households with access to electricity before 2020.

### Financial Institutions

The following banks could be involved in financing investments in minor power systems:

- Vietnamese Bank for Agriculture and Rural Development (VBARD), which is the dominating bank regarding funding investments in rural Vietnam.
- The Bank for Investment and Development of Vietnam (BIDV) is already involved in financing electrification projects.

The following banks and informal financial institutions could be involved servicing consumer contribution:

- The Vietnam Bank for Social Policies was established in 1995 as the poor people's outlet of the VBARD and in 2003 the VBP was replaced by the Vietnam Bank for Social Policies (VBSP).
- The Peoples Credit Funds (PCF) was established in the early 1990s and in June 2001 there was a total of 947 PCFs having a total of about 714,000 members.
- The Vietnam Post (VPSC) was established in 1999 and operates under the authority of Vietnam Post and Telecom.
- Local Credit guaranteed Fund that guarantees loans for borrowers having feasible production and business projects but having no asset for collateral.

The Development Assistance Fund (DAF) would disburse government and ODA funds from the Fund.

The micro finance institutions will play a core role in providing credit and saving facilities to households not only for connection to the electricity system but also to get access to appliances that can utilise electricity for social and economic development.

### **Investors**

Categories of investors are defined during Project Area 4, but it can be expected that investors will be joint stock companies, companies with limited liability and cooperatives.

### **Others**

Besides the above mentioned target groups a number of authorities and institutions will be involved when needed.

Ministry of Finance (MOF) is responsible for preparing the annual budget in accordance with Government policy. They will coordinate the needs for infrastructure investments and allocate the resources to the specific ministries.

Ministry of Nature Resources and Environment (MNRE) is appointed as Designated National Authority under the Kyoto Protocol.

The Agricultural Promotion Centre under the Ministry of Agriculture and Rural Development, operates at province level, district level and Commune/village level, and promotes technology to improve living standard in the villages. The centre has a direct involvement in the life of the villages and is highly experienced in motivating, training and information.

Ministry of Labour, Invalids, and Social Affairs is now preparing the National Targeted Programme on Poverty Reduction (NTPR) for the period 2006-2010

Electricity of Vietnam (EVN) is executing GOVs policy to connect communes to the grid. On the provincial level EVN must report their plans to PDOI who has the overall responsibility for electrification.

## **1.5 Policies/guidelines relevant to the project**

Enterprise Law, January 2000

Decree 178/1999/ND-CP on credit guarantee.

Decision 423/2000/QD-NHNNI by the State Bank dated 22/09/2000 on the credit policy of banks towards farming activities stipulate that the head of a farm household can borrow up to 20 million VND without collateral.

The ten-year socio-economic development strategy 2001-2010 by the Government of Vietnam envisions an improvement of standard of living through a wide range of policy measures, among them the energy sector

Vietnam Rural Energy Study

This study, completed in May 2000, has identified potentials and barriers for rural electrification in Vietnam

Policy on Rural Electrification, Socialist Republic of Vietnam

This document presents a broad view of the principles of rural electrification policies on which all projects should be based.

Vietnam-Sweden Poverty Alleviation Programme or “Chia Se”

As this programme supports among other thing also projects in the Ha Giang province, possible mutual benefits with the current activities in the province will be considered.

Comprehensive strategy on growth and hunger eradication and poverty alleviation (The government Prime minister approved by the official circular No 2685/VPCP-QHQT, dated May 21, 2002)

## 1.6 Documentation available

Vietnam Development Report 2002, Implementing Reforms for Faster Growth and Poverty Reduction.

Vietnam Rural Energy Study, Final Report, May 2000, Volume 1-4

ESMAP, Options for renewable energy in Vietnam, July 2000

Renewable Energy in Vietnam, March 2001

Renewable Energy Master Plan, Summary, March 2002

Renewable Energy Action Plan, May 2001

Financial Sector Reforms in Vietnam: Selected Issues and Problems, 2001

Access to Resources, Mekong Economics Ltd, 2004

## 2 THE PROJECT

### 2.1 Overall objectives

The overall objective of the programme is that the rural population of Vietnam has increased access to options for rural energy services that are reliable, affordable, appropriate, and sustainable.

### 2.2 Project objectives

The objective of Programme Area 3 is to overcome key financial barriers to accelerate growth in renewable rural electrification.

### 2.3 Expected results

The expected result is:

- A proposal for appropriate models for government incentives for mobilising of investments in local rural electrification based on renewable energy.

- At least one model tested in obtaining financing for pilot projects included in the programme.
- Potential financiers shall be informed about proposed models for financing of renewable energy projects and associated business opportunities.
- Information material for marketing support shall be available.

## 2.4 Activities

### Activity 1: Developing financial service models

Activity 1 will be made in close co-operation with Area 1, 2, and 4. Area 1 planning activities will reveal the need and the circumstances and the co-operation with Area 4 will provide the understanding of the ownership. Area 2 will provide the technical standards and the cost implications hereof will be deducted for the cost calculations.

#### Activity 1.1. Analyse legal and institutional framework

Economic and social development in remote areas has a high priority in Vietnam and the Government allocates large resources on the State Budget for supporting this development. These resources are disbursed through a number of programs administered by different ministries and disbursed on different administrative levels. Electrification of remote villages should be an integrated part of these programs. The VSRE therefore must be seen as a supplement for already existing support programs. The following sub-activities will be undertaken:

- a. Analysis of existing support programmes in Ha Giang and Quang Nam that will be potential sources for electrification programmes.
- b. Proposal of conditions for concessional loans and guarantees.
- c. Analysis of existing Funds at province and district level in Ha Giang and Quang Nam to host the electrification Fund.
- d. Proposal of eligibility criteria for access to the Fund.

The proposals will be discussed during an opening workshop and following meetings with relevant ministries (e.g. MPI, MOF, MARD, and MOI).

This activity will involve authorities on the national as well as the provincial level.

#### Activity 1.2. Involvement of Commercial banks

Commercial banks provide loans to financial viable projects and demands collateral or guarantee may allow using assets created by given loans as guarantee of loans. Commercial banks can be on-lending banks of sources from the Fund or based on guarantee from the fund. The following sub-activities will be undertaken:

- a. Discussions of risk sharing related to on-lending agreements
- b. Propose a scheme for on-lending.

This activity will involve branches on the provincial level.

#### Activity 1.3. Consumer contribution/micro finance

Consumer contribution will be coordinated through a micro finance institution or be the service supplier directly by establishing incentive tariffs or jusissance rights. The following sub-activities will be undertaken:

- a. Identify micro-credit institutions in the districts selected for the pilot projects.

- b. Analyse the condition for credits in existing micro-finance institutions.

This activity will involve identification and negotiations with existing legally established microfinance institutions operating in several villages.

#### **Activity 1.4. Design financing model**

Based on the feasibility studies prepared under Project Area 1, different financing packages (share of equity, subsidy and loan) will be analysed to identify how the share of sources in the package will affect the projects ability to cover O&M costs and equity and loan repayment. The analysis will be made with respect to scale of project, density of demand etc.

The analysis will result in one or more standard packages with specific requirements for investors/developers to have access to the Fund.

The model will be presented for relevant authorities and ODAs.

#### **Activity 2: Marketing of the financial services**

##### **Activity 2.1 Identification of stakeholders**

Some stakeholders are identified at provincial level while other will be identified during the process of preparing and implementing the pilot projects. The identification of relevant stakeholders will have to be coordinated carefully with project Area 1 and project Area 4. When stakeholders are identified the financing models will be presented for relevant service companies, commercial banks and micro finance institutions to achieve agreement on contribution and requirements. Letters of Understanding will be signed with the relevant stakeholders.

##### **Activity 2.2 Contact with Global Funds**

Renewable energy projects can be eligible for contribution from global financing mechanisms such as the Global Environmental Fund and Clean Development Mechanism under the UN Climate Convention/Kyoto Protocol. It will be assessed how the Fund in a longer perspective can support investors in getting access to these mechanisms as well as to other ODAs. MOI could be the proponent that bundles minor projects and presents them for the international funds. MOI will be directly involved in approaching the international funds. Under activity 4.2 there will be a special training package for MOI staff for approaching these funds.

#### **Activity 3: Testing the model**

Activity 3 will be prepared in close co-operation with Area 1 and 4. Area 1 will provide the wider perspective of the need. The ownership and capacity of the implementing organisations will be provided by Area 4.

##### **Activity 3.1 Preparing for the Fund and disseminating information**

After a principal acceptance of the fund by GOV and relevant donors the Fund should be established in Quang Nam and Ha Giang. The framework for the Fund is established under activity 1.1. and under activity 3.1. the legal formalities are established as well as the modalities of the Fund and the needed capabilities identified.

The activity will comprise:

- Allocation of a budget
- The formal relations between the Fund and other funds addressing poverty reduction
- The procedures for application to the Fund
- Preparation of template document
- Specify eligibility criteria
- Identification of target groups
- Description of promotion campaign
- Outline need for technical assistance and potential cooperation with other institutions.
- Preparation and distribution of information material

### **Activity 3.2. Preparing finance package for pilot projects**

When the pilot projects are identified the Consultant in cooperation with the staff in the institution responsible for the Fund, will prepare a financing packages based on the specific feasibility studies and business plans for pilot projects.

During the preparation the procedures, modalities, and capabilities of staff will be evaluated.

When the feasibility studies prepared in Area 1 and Area 4 have reached a maturity calling for conditions of financing, the activity will be extended to assist in proposing financing schemes and securing funds.

### **Activity 3.3. Assessment of the model**

Based on the experience from preparing finance packages for the pilot projects the procedures, modalities and training programmes will be adjusted.

## **Activity 4: Support to financial intermediaries in the marketing of financial service models**

### **Activity 4.1. Needs assessment**

The staff of the Host of the Fund will need a expertise in a number of activities related to project preparation and financing. In some respects these capabilities will be general and in some respects they will be technology specific. During activity 3.1 there will be a general decision on which skills should be in-house and which skills should be outsourced. During activity 4.1. the training needs of the Host of the Fund as well as other relevant institutions such as micro finance institutions, will be assessed and specific training programmes will be designed by the Consultant and discussed with the PMU.

### **Activity 4.2. Capacity building**

Capacity building in the form of on-the-job training will be undertaken and other services will be provided in parallel with activity 3.2.

## **2.5 Use of resources**

### **Total resources from Consultant**

International experts 69.5 weeks in Vietnam and 246 hours at home office  
Local experts 756 days

Interpretation and translation  
Fifteen (15) international flights  
Accommodation and daily allowance for international consultants  
Accommodation and daily allowance for local consultants when working outside Hanoi.  
Local travel  
Three (3) workshops (one start-up and two for evaluation)

### **Distribution of resources**

International experts

#### **The VSRE Team leader, Mr. Ludovic Lacrosse**

10.5 weeks in Vietnam

Mr. Lacrosse main duties will be communication with the Area Leader, the local area leader and control that work is coordinated with other project areas and performed according to Terms of Reference and according to the Project Document. He will also support the team with practical arrangements.

#### **The Area Leader, Mr. Alan Dale Gonzales**

Six (6) visits to Vietnam

Totally 25.8 weeks in Vietnam and additionally 101 hours at home office.

The Area leader will be in charge for the whole work within Area 3. He will be responsible for keeping the team leader informed about progress for area 3 activities. As Area Leader, he will lead the first meetings as well as the final meeting with the involved authorities under activity 1.1. He will further lead the first meetings with the commercial banks (activity 1.2). Mr. Gonzales will be responsible for the evaluation workshop (activity 3.3) that will take place around 18 months after project start-up. Besides his functions as Area Leader, Mr. Gonzales will be in charge of activities related to capacity building (activity 4). When Mr. Gonzales is not in Vietnam, he will monitor the work in Vietnam with assistance from the Team Leader and the local Area leader.

#### **One International Expert, Mr. Michael Kvetny**

Five (5) visits to Vietnam

Totally 17.7 weeks in Vietnam and additionally 78 hours at home office.

Mr. Kvetnys duties will be to involve global financing (activity 2.2) and local stakeholders (activity 2.1) as well as local financial sources (activity 1.3). He will under supervision of the Area Leader, and in co-operation with Mr. Lennart Larsen define the duties and operation of the Fund.

#### **One International expert, Mr. Lennart Larsson**

Four (4) visits to Vietnam

Totally 15.1 weeks in Vietnam and additionally 67 hours at home office.

Mr. Larssons duties will be to design the model (activity 1.4) and to prepare the specific loan packages (activity 3.2). Additionally Mr. Larsson will contribute in the capacity building. He will under supervision of the Area Leader, and in co-operation with Mr. Michael Kvetny define the duties and operation of the Fund.

### Local experts

#### **The Area leader, Mrs. Pham Thi Hanh Nhan**

326 days with the project.

The local Area leader will work on the projects partly full time and partly part time during the whole implementation phase.

She will be in charge of the very important first activity that shall ensure that involved authorities in Vietnam acknowledge the approach of the project area and contributes with input to find a sustainable model for financing electricity projects in remote areas. He will also participate in the duties and operation of the Fund.

She will be working with assessment of training needs in the two provinces (activity 4.1) and afterwards working part time with on-the-job training assessment (activity 4.2).

#### **Financial Models, Mrs. Nguyen Thi Mai Anh**

215 days with the project

Mrs. Mai Anh will assist the local area leader during meeting with involved authorities (activity 1.1.). Further she will work with the relations to the international funding schemes (activity 2.2). She main input will be in dissemination of information about the financial model (activity 3.1.) and in preparation of specific loan packages (activity 3.2).

#### **Financial Models and Market, Mr. Nguyen Duc Chi**

215 days with the project

Mr. Chi will have his main input in working with the micro finance institutions (activity 1.3), commercial banks and local electricity service companies (activity 2.1). Furthermore he will participate in training needs assessment (activity 4.1) and training (activity 4.2).

#### **Resources from the client**

A number of representatives from authorities at central and provincial levels will be involved to ensure a successful implementation of project area 3. During the preparation phase the project received valuable support from these authorities that are also to approve suggestions. It is hoped that this valuable cooperation will be continued during the implementation phase.

### **3 CONDITIONS AND ASSUMPTIONS RELATED TO PROJECT IMPLEMENTATION**

#### **3.1 External/Internal factors affecting the implementation**

A major part of financing must be mobilised from State and Provincial budgets. It is assumed that these sources will contribute and supplement the sources from SIDA.

It is also assumed that a Host for the Fund can be found i.e. the provincial branches of DAF.

Micro finance institutions in the local area will play a core role in motivating consumers and establish the necessary credit and saving mechanisms for consumer contribution. It is assumed that these institutions will participate in the activities.

Experience from the RARE programme has shown that it can be difficult to identify target areas.

### 3.2 Assessment of risks

Access to electricity services has a high priority in government policy and the speed of electrification and the results achieved so far are impressive. The target areas for VSRE is areas that would not be electrified within the next 5 to 10 years and VSRE therefore is an opportunity for GOV to further speed up the process. It is assumed that it will be possible to link electrification of remote areas with the poverty alleviation programmes so that financing sources can be mobilised this way. This should be possible with the ongoing reform of public financing. However, the implementation of the reform can create insecurity among different authorities about the legacy of this interrelation and thus create reluctance to utilise this opportunity. Therefore it should, as one of the first steps be clarified with the relevant ministries, how this interrelation could be established in accordance with the revised State Budget Law.

The Development Assistance Fund has the capacity to involve in electrification projects in remote areas. If it is necessary to make changes in the mandate to give access for minor projects this should be done during negotiations between MOI and the Provincial PCs.

Access to finance in remote areas is a not only a problem for electrification but a general problem for the social and economic development in these areas. The project by itself cannot establish these institutions but will have to rely on existing institutions. The selection of target areas for the pilot projects will be made during the implementation phase and it must be a requirement that there are local financing institutions in the areas that are willing to get involved in the project.

The selection of target areas for the pilot projects will be one of the most important activities and if it shows up to be difficult to identify relevant target areas the project can be delayed.

## 4 PROJECT IMPLEMENTATION

### 4.1 Organisation and implementation

#### Overall Management

The Ministry of Industry has the overall responsibility for the implementation and coordination of the Programme. A Programme Management Board (PMB) is established at the MOI. A Steering Committee is formed with the task to take decisions on Annual Plans of Operation for the Programme Areas, the Programme budget and reallocation of funds between the areas. Under MOI, the Project Management Board (PMB) is responsible for management of the project at national level.

#### Implementing agency

Project Management Units (PMUs) chaired by Department of Industry (DOI), under Provincial People Committees (PPCs), are Implementing Agents (IAs) of the project at provincial level.

### **Programme Consultant**

The Programme Consultant supports MOI and the IAs during the implementation. The Programme Consultant provides and coordinates technical assistance personnel.

### **4.2 Capacity of implementing organisation and need for support**

Implementation of project area 3 will involve authorities at the national level as well as international institutions and it is foreseen that MOI will support the PMUs and the Consultant in the negotiations with these authorities and institutions.

The composition of the Consultants team with international as well as local experts with very long experience of mobilising financing for investments will guarantee sufficient competence.

It is therefore expected that the described organisation will be fully capable of fulfilling the goals set out for Area 3 within the time frame given in the time schedules.

### **4.3 Time schedule**

The implementation plan is enclosed. A well functioning financing model is an assumption for implementation of the pilot projects. The implementation of project Area 3 therefore will be finalised one and a half year after upstart of the implementation phase of the programme.

However, the model should be utilised after the test on the first pilot projects and there are made a reservation in the resources for the Consultant to support the PMU during the last one and a half year that will be a test of the sustainability of the model.

### **4.4 Budget and financing**

The budget for the implementation phase will be according to the budget in the Contract, increased with the amount for Training and Seminars, SEK 27,200, as a consequence of Addendum number one. If possible it should be considered to extend the budget for this project area to provide further assistance to the PMUs to include more districts in the last 18 months of the implementation phase. The experience from involving stakeholders and capacity building could be transferred to other districts during this period.

All cost for the Consultant will be financed from SIDA according to the Contract. MOI and the Provincial Authorities will cover the costs for all fees for their participation by themselves.

## **5 ECONOMICALLY SOUND AND SUSTAINABLE DEVELOPMENT**

### **5.1 Policy and legislation to support implementation**

There are a number of major reforms being implemented in Vietnam during the next years: Decentralization, extension of initiative rights for grassroots local authorities in identification of priority sequence for projects and programs, entrusting them to manage and formulation of local economic development and hunger eradication and

poverty alleviation projects, based on the orientation, objectives and plans approved by the Government. Strengthening responsibility and managerial capability of local authorities in distribution of resources, implementation of projects, aimed at social and economic development, hunger eradication and poverty alleviation. The reform of the financial sector and the reform of the State Budget will both affect the implementation of area 3 but so far the reforms seems to support the approach of VSRE.

## **5.2 Choice of technology in relation to prevailing conditions**

The model developed during project area 3 will apply to different choices of technology and thus not link to project to a specific technology.

## **5.3 Management and institutional capacity building**

This subject will be undertaken during Project Area 4.

## **5.4 Environmental considerations**

Pilot projects will be based on renewable energy sources and in correspondence with the Vietnamese sustainable development strategy.

## **5.5 Socio-cultural aspects & gender equality**

The project will focus efforts to enhance capability and create opportunity for women and men so as both can bring their talents into play, participating in implementation of the project and receipt of its achievements. Enhancing the access of women to credit funds, helping them to get trained on method of use of the given loans, enabling them to directly use the loans, giving them favourable condition to attend meetings, and involve in planning, implementing and monitoring the implementation of projects and programs, in communes, villages.

Strengthening information, education social motivation with contents and forms corresponding to each region, each target group, aimed at enhancing the awareness and responsibility of government authorities, organizations, families and all citizens on gender equality; promotion of giving credit loans to poor households to develop production and business; promotion of agricultural, forestry and fishing extension; giving guidance to poor people on way of living earning; summarising and duplicating special hunger eradication and poverty alleviation models for various areas.

Linking the electricity supply with the implementation of objectives of enhancing people intellectual standard, agricultural and rural economic development, improving social welfare, hunger eradication and poverty alleviation, shortening the developmental gap between urban and rural areas. Implementation of credit policies corresponding to target groups, giving credit loans with reasonable interest rate, in time, at the right season, to poor people, especially women. At present, it is still necessary to provide loans with low interest rate to poor people, but in the long terms, it should gradually change into giving the poor, women more access to official credit institutions by means of simplified procedures, training rather than favourable credit loans being applied at the time being.

## **5.6 Financial and economic sustainability**

Project area 3 will establish a financing model that attracts different sources of finance including government subsidies and ODA. Subsidies will be targeted and based on clear and transparent requirements. The model will provide the financial support in a way that stimulates managers of the electricity systems to deliver electricity services cost efficiently

and stimulates consumers to utilise the opportunities that access to electricity services gives to improve social and economic welfare. The financial model will be operational also after the implementation of VSRE.

## 6 FOLLOW-UP AND EVALUATION

### 6.1 Time schedule for follow-up

After 18 month there will be an evaluation of the progress of project area 3 and necessary adjustment will be made. During the last 18 months the Consultant will supervise PMU and monitor the sustainability of the financing model.

### 6.2 Indicators for follow-up

Activities	Indicator
1.1 Establish framework for financing models.	Results of analysis and proposals reported to PMB/MOI
1.2 Involvement of commercial banks	Proposal for un-lending scheme presented for PMB
1.3 Consumer contribution	Results of the analysis reported to PMB
1.4 Design of financing models	A number of standard financing models presented for PMB
2.1 Identification of stakeholders	Stakeholders identified, financing models presented and Letter of Understanding between PMB and stakeholders signed.
2.2 Contacts with Global Funds and other ODAs.	The results of consultations with ODA is reported to PMB
3.1 Establishing the Fund	Modalities for the fund approved by fund host and PMB
3.2 Preparing a finance package for pilot projects	Based on applications from (pilot) projects finance packages are prepared.
3.3 Assess the model.	Design of models and modalities revised and approved by PMB
4.1 Training needs assessment.	The relevant stakeholders visited and training needs assessed and reported to stakeholders and PMB
4.2 Capacity building.	Training undertaken and results tested.

### 6.3 Division of roles and responsibilities for follow-up

The implementing agents supported by the Consultant have the responsibility to follow up on the progress of the project area and report to PMB.

## 6.4 Indicators for fulfilment of objectives

Objective	Indicators
Overcome financial barriers to accelerate growth in renewable rural electrification.	A number of off-grid renewable rural energy projects are implemented in Ha Giang and Quang Nam with share of financing from private sources.

Results	Indicators
1: Proposals for appropriate models for government incentives for mobilizing of investments in local rural electrification based on renewable energy.	Models are developed and accepted by GoV, the PPCs and SIDA.
2: Potential financiers informed about proposed models for financing of renewable energy projects and associated business opportunities.	Strategy for implementation of the financing models is approved by PMU.
3: At least one model tested in obtaining financing for pilot projects included in the programme.	The Fund is established and funds are available for renewable rural electrification projects.
4: Information material for marketing support available	PMU, Host for Fund, commercial banks and micro finance institutions have achieved the necessary capacity to implement the models.

## 6.5 Time schedule for evaluation

Project area 3 will be evaluated after 18 months from start-up.

## 6.6 Division of roles and responsibilities for evaluation

The implementing agents supported by the Consultant have the responsibility for evaluating the results.

## 6.7 LFA-matrix

### Logical Framework Assessment: Mobilising investment for renewable electrification (Programme Area 3)

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions
<b>Overall objective</b>	The rural population of Vietnam has increased access to options for rural energy services that are reliable, affordable, appropriate, and sustainable	A number of off-grid renewable rural energy projects are implemented in Ha Giang and Quang Nam with share of financing from private sources.	Monitoring reports on the implementation of the electrification master plans in the two provinces	
<b>Expected results</b>	<p>1. Proposals for appropriate models for government incentives for mobilizing of investments in local rural electrification based on renewable energy</p> <p>2. Potential financiers informed about proposed models for financing of renewable energy projects and associated business opportunities.</p> <p>3. At least one model tested in obtaining financing for pilot projects included in the programme</p> <p>4. Information material for marketing support available</p>	<p>1. Models are developed and accepted by GoV, the PPCs and SIDA.</p> <p>2. Agreements reached with relevant stakeholders</p> <p>3. The Fund is established and funds are available for the pilot projects.</p> <p>4. PMU, Host for Fund, commercial banks and micro finance institutions have achieved the necessary capacity to implement the model.</p>	<p>The Fund is formally established.</p> <p>Letters of Understanding signed</p> <p>On-lending documents and/or guarantees signed.</p> <p>Announcement of the Fund</p>	<p>SIDA and GoV contributes to the Fund</p>
<b>Activities</b>	<p>1.1 Analyse legal and institutional framework</p> <p>1.2 Involvement of commercial banks</p> <p>1.3 Consumer contribution</p>		<p>Progress reports</p> <p>Progress reports</p> <p>Progress reports</p>	<p>There is a positive approach among relevant ministries to go into a dialogue on the model</p> <p>There are micro finance institutions in the two</p>

			provinces that are seriously interested in getting involved in the project.
	1.4 Design of financing models	Progress reports	
	2.1 Identification of stakeholders	Progress reports	Relevant projects can be identified
	2.2 Contact with Global Funds and other ODAs	Progress reports	
	3.1 Establishing the Fund	Progress reports	GoV approves the model
	3.2 Preparing a finance package for pilot projects	Progress reports	Relevant feasibility studies and business plans are available
	3.3 Assess the model	Progress reports	
	4.1 Training needs assessment	Progress reports	
	4.2 Capacity building	Progress reports	

### Implementation Plan Area 3

Area 3, Mobilising Financing Plan of Activities	2005			2006									2007									2008																																										
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	10	11	12	1	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	3	4	5	6	7	8	9																												
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1.3. Consumer contribution/micro finance				■																																																												
1.4. Design financing model				■																																																												
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2.2 Contact with Global Funds				■																																																												
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3.1 Preparing the Fund and information				■																																																												
3.2. Preparing finance for pilot projects				■																																																												
3.3. Assessment of the model				■																																																												
<b>4: Support marketing of financial models</b>																																																																
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4.2. Capacity building				■																																																												
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Financing Pilot Projects										X																																																						
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### Work Plan Area 3