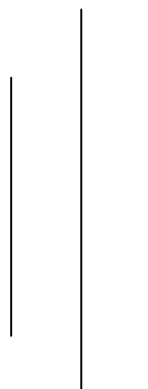


His Majesty's Government of Nepal
Ministry of Science and Technology
Alternative Energy Promotion Centre



Renewable Energy Subsidy Delivery
Mechanism, 2000



November 2000

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Renewable Energy Subsidy Delivery Mechanism, 2000

1. Introduction

This Delivery Mechanism has been prepared to make necessary arrangement to make proper flow of subsidy to be made available through different financial resources as per the Cabinet Decision dated 23 October 2000 of His Majesty's Government of Nepal.

This delivery mechanism is based on following principles:

1.1 Social Equity

- 1.1.1 Subsidy is an important tool to provide maximum benefit to the low income household with limited financial resources as it provides an opportunity for low income households' to access the services
- 1.1.2 There should be a maximum threshold for subsidy amount to households otherwise there would be more social harm than benefit
- 1.1.3 It is necessary to fulfil social equity objective through establishing regional service centres to provide technical and other services.
- 1.1.4 The subsidy approval and payment mechanism need to be made simple and transparent by developing unequivocal criteria in all stages of the project cycle.

1.2 Cost Effectiveness

- 1.2.1 The renewable energy market should be expanded effectively, i.e., the problems of free riders should be minimized.
- 1.2.2 Least cost solution should be sought while selecting a project for the particular location.
- 1.2.3 Projects with high productive demand for power should be favoured compared to projects that make little use of electricity for productive purposes to achieve maximum economic benefits and development impact per unit invested.

1.3 Motivating the Renewable Energy Industry

The objective of subsidy should is also to motivate the investment in the early period of the industry. This will increase accessibility of the technology and create market competition and benefit the consumer.

1.4 Commercial Market Structure Compatibility

- 1.4.1 Excessive subsidy levels results in market demand that is beyond the reach of the financial resources available for the subsidy and create market distortion. Therefore, subsidy level should be based on commercial market structure.
- 1.4.2 Provide Interest subsidy is not desirable as it sends wrong signals to the rural population about the true cost of rural credits and can encourage arrears in payments.

1.5 Productive End-Use

- 1.5.1 The past experiences have shown that it is necessary to provide support in the form of technical assistance to make renewable energy investments economically feasible through improving the utilization of projects. This will improve technical and financial capability of entrepreneurs to operate and maintain renewable energy systems such as micro hydro.
- 1.5.2 Micro-hydro projects should be encouraged to be installed in areas unlikely to reach the load centre within next 5 years and in remote areas with ample opportunities for agro processing and development of tourism.

2. His Majesty's Government of Nepal's Programme

Subsidy funded by His Majesty's Government's own financial resources to the following renewable energy technologies will be channelled as follows:

2.1 Solar Dryer/Cooker

Solar Dryers and cookers will be distributed to all districts of the country to reduce petroleum fuel consumption through maximum use of solar energy for water heating, cooking food and drying agricultural crops. Subsidy delivery for solar dryers and cookers will be implemented as follows:

- a) Subsidy delivery and all other arrangements for solar cookers will be made available through the Alternative Energy Promotion Centre.
- b) His Majesty's Government of Nepal will provide subsidy to following solar dryers and cookers.
 - 1. Box Cookers
 - 2. Parabolic Cookers 1.4 meter diameter (SK-14 Parabolic Cookers)
 - 3. Wooden 12 sq. ft. Box Dryers
 - 4. Tunnel Dryers 24 sq. ft.
- c) Requests are to be made in application form as specified by AEPC.
- d) Solar dryers and cookers will be distributed to AEPC pre-qualified companies.

2.2 Solar Photovoltaic Pump

Solar photovoltaic pump program will be implemented to encourage income-generating activities through supply of water for drinking and agriculture in uplands.

- a) Subsidy delivery for solar photovoltaic pumps will be made available through the Alternative Energy Promotion Centre.
- b) Solar photovoltaic pumps will be installed through solar companies that are pre-qualified by AEPC.
- c) Necessary feasibility study for Solar photovoltaic pump installation will be conducted through solar companies and NGOs. If found feasible AEPC will call for technical and financial proposal for installation and tenders. The selected proponents will be entrusted with the installation of solar photovoltaic pumps.

2.3 Wind Energy

Collection of wind data will be the main focus at present as they are necessary for promotion of the wind energy. The subsidy to wind energy will not be provided as such arrangement has not been made by the HMG/N yet.

3. Biogas Support Programme

Distribution and subsidy delivery to biogas programme is as follows:

- a) Biogas Support Programme (BSP) has signed contract with Agricultural Development Bank (ADB/N) and established necessary fund for loan flow for biogas programme.
- b) All the participating biogas companies and BSP has bank accounts with ADB/N.
- c) All the participating companies enter into contract with BSP in beginning of the year and as per the objective set in the contract by the companies BSP allots quota to each company.
- d) Within the contract as mentioned in 'c' above, the companies build and provide repair services and report to BSP every month. Based on the report by the participating companies BSP releases the subsidy money to the bank accounts of the participating companies.
- e) BSP selects some percentages of the plants randomly from the plants constructed as per the report of the companies for the field verification.
- f) The penalty is levied and deducted from the amount to be disbursed to companies by BSP if BSP finds any shortcomings based on pre-prescribed quality standards.
- g) Companies make request to BSP release of part of guarantee deposit for services provided against guarantee and repair services with details of services provided by the company.
- h) BSP selects some percentages of the plants serviced and repaired randomly from the reported plant repair and maintenance for the field verification and if found correct funds will be transferred to companies' account.
- i) The payments with respect to plants not inspected at field will be made on percentage basis of inspected plants performance.
- j) At the end of the year the accounts of the companies with BSP will be reconciled.

4. Direct and Indirect Subsidies to Micro Hydro and Solar Energy (Solar Home Systems)

An arrangement has been made to provide direct and indirect subsidy for the development of micro hydro and solar energy (SHS) through His Majesty's Government of Nepal and Energy Sector Assistance Programme (ESAP) of Danida as per Renewable Energy Subsidy Arrangement, 2000 of HMG/N.

4.1 Institutional Mechanism

The direct subsidy under this programme will be channellized by establishing Interim Rural Energy Fund. Other indirect subsidy (assistance) to micro hydro development and solar energy development will be provided through Mini Grid Support Programme (MGSP) and Solar Energy Support Programme (SSP).

4.1.1 Interim Rural Energy Fund

In order to arrange the HMG/N and ESAP's fund for subsidy to the micro hydro and solar energy (SHS) an Interim Rural Energy Fund (IREF) will be established. The IREF will be governed by a board with representatives from Ministry of Science and Technology and Royal Danish Embassy and will be under the supervision of the ESAP Steering Committee. The IREF will be managed by an Joint Executing Committee consisting of a Executive Director of the AEPC as a director and Chief Advisor of the ESAP as a member.

Working Procedure of IREF

- a) The Board shall convene for ordinary meetings on a quarterly basis and for ad hoc meetings if called upon to do so by a member of the Executive Committee. The Board will review quarterly financial and physical progress reports and comments on fulfilment of investment targets, assess adequacy of funds and cash flow in relation to investments and operational expenses. The board will also review audited annual financial report
- b) The IREF will be managed by an executive committee for which a secretariat will be established. Executive director of the AEPC will be the director of the IREF Executive Committee and is responsible for day-to-day of the IREF and for all matters pertaining to the use of IREF funds. Other member of the Committee, CA of ESAP, will assist the director and co-sign all payment orders pertaining to the use of IREF funds. The EC will meet regularly in the monthly and as and when required basis. Financial resources to cover cost of operating secretariat will be covered by RDE/ESAP.

Activities of IREF

The objective of IREF is to provide cash subsidies enabling the rural population of Nepal to get access to new, sustainable energy technologies. The Executive Committee of IREF shall carry out the following tasks:

- a) Establish conditions for subsidy support - within the framework of the Renewable Energy Subsidy Arrangement as decided by HMG/N.
- b) Approve and disburse subsidies to projects that are recommended by support programmes.
- c) Prepare proposal for establishing a permanent Rural Energy Fund and initiate and support the process of its establishment.
- d) Let participate other commercial banks by improving the existing arrangements to make loans more accessible, simple and economical for the rural users of renewable energies.

- e) An effort will be made to reduce the cost of loan transaction in remote areas through testing supplementary arrangements such as collective loan and guarantee system with the involvement of more financial intermediaries, e.g., local financial institutions, cooperatives, etc.

4.1.2 Delivery Arrangements for Micro Hydro Projects

A Mini Grid Coordination Committee (MGCC) under the chairmanship of the Executive Director of Alternative Energy Promotion Centre (AEPC) serves to ensure overall coordination and monitoring of activities. The other members of the committee are National Planning Commission, Mini Grid Support Programme (MGSP), financial and social intermediaries and representatives of micro hydro industry. The committee will provide recommendations to the MGSP on issues of operational relevance including policy formulation, progress and work-plans, administrative procedure, coordination and monitoring. The MGSP will take day-to-day management of of Micro Hydro Component with relevant AEPC staff and experts seconded to MGSP on a case-by-case basis. The major activities of the Support Programme will be as follows:

- a) to pre-qualify companies and consultants who will be undertaking the job of project survey, construction, installation, inspection, etc.,
- b) to prepare procedural manuals for survey, construction and installation of the micro hydro. The support programme will also assist in feasibility studies
- c) to appraise the feasibility study reports and recommend for subsidy to the IREF.
- d) to assist entrepreneurs and social organizations undertaking the micro hydro projects in contractual agreements with the industries/companies.
- e) in addition, the support programme will make necessary arrangements for human resource development for financial institutions employees, consultants and companies already involved and with potential to be involved in micro hydro development.

Preparatory studies (reconnaissance and feasibility), feasibility studies and project planning will be entrusted to qualified local experts and NGOs. Project preparatory works, such as feasibility studies, will be partly financed by the “Micro-Hydro Component”. Such assistance for survey will be demand driven. If necessary ESAP experts will also provide necessary technical guidance to ensure the quality of the projects undertaken.

Technical backstopping and other support is essential for sustainable operation of micro-hydro projects, particularly in the more remote the area. Therefore, technical and other supports will be provided through establishing Area Centres.

Area Centre would actively promote productive end-use and work towards meeting the objective of ensuring financial sustainability. Innovative approaches will have to be explored to ensure the sustainable operation of such service delivery centres.

4.1.3 Delivery Arrangements for Solar Home Systems

A Solar Energy Coordination Committee under the chairmanship of the Executive Director Alternative Energy Promotion Centre (AEPC) will be formed to effect a proper organization of delivery arrangements, promote related industries and safeguard end-users interest. The other members of the committee are representatives from the National Planning Commission, Ministry of Finance, ESAP, financial and social intermediaries, NGOs, and representatives of solar energy industries. The coordination committee will mainly advise Solar Energy Support Programme and overall coordination and monitoring of its activities. The coordination committee will recommend on necessary criteria pertaining to pre-qualification of solar energy companies. The committee will also advise on necessary policies, criteria for administrative procedure and coordinate with other concerned institutions related to the development of solar energy (SHS) in Nepal. The Solar Energy Support Program (SSP) and Solar Energy Test Station (SETS) will be established under this committee for implementing activities related to promotion and dissemination of solar energy and to test and certify quality standards of the SHS equipments, respectively.

Solar Energy Support Programme (SSP)'s main objective is to provide technical assistance to SHS manufacturers, distributors and household users of SHS. The activities of the Support Programme will include,

- a) To strengthen distribution networks of solar energy systems (SHS).
- b) To strengthen procedures for pre-qualification of companies and consultants who will be undertaking the job manufacturing, distribution, installation, and inspection of SHS based on criteria provided by the coordination committee.
- c) To facilitate interaction between SHS manufacturer/distributor and users in fixing price ceilings
- d) To monitor subsidy policy, monitoring and administrative work
- e) To facilitate the activities related to battery recovery.

Since the end-users of SHS are peoples in rural areas it is appropriate to promote it through competitive market. At the same time to make after sales service for the SHS sold in market, a minimum demand level is necessary. Therefore, a separate financial assistance will be provided for regional promotion campaigns in financially less attractive and remote areas. ESAP will bear the cost of such campaigns in designated areas.

4.2 Subsidy Delivery Mechanism

Subsidy delivery mechanism will be simple and transparent and it will be in line with subsidy objective. Therefore, subsidy for micro hydro and solar home systems will be as follow:

4.2.1 Micro Hydro

Depending on the size of the proposed project, the project cycle entails prefeasibility, feasibility study by MGSP certified companies, consultants, or NGOs and appraisal of the feasibility study by the Mini Grid Support Programme

(MGSP). If it is found appropriate by the MGSP, the proponent will have to apply for subsidy to IREF in the prescribed form with the recommendation from the MGSP.

The IREF will decide on the eligibility for subsidy based on prescribed criteria. If necessary, IREF may give conditional approval to facilitate financial institutions' procedure of loan processing. IREF will give final approval if it is satisfied that all arrangements with regard to equity investment, loan and contract between proponent and constructing/installing company fulfils the subsidy criteria. If necessary, IREF may take assistance of MGSP to appraise the proposed project.

In order to reduce the financial cost of the project, IREF will release 50 percent of the subsidy to the manufacturer/contractor. IREF will require a performance bond from the manufacturer prior to the advance payment against the subsidy.

After commissioning of the project, the entrepreneur or the social organization responsible for the project will request IREF to get the output of the project verified through IREF specified person/institution. After the verification of the output, IREF will release the subsidy amount with 10 percent of the amount retained against guarantee and after sales service. The retained amount will be released at the end of one year from the date of verification after ascertaining equipment's quality through evaluation.

4.2.2 Solar Home System

Subsidy to the SHS will be provided to the manufacturer based on specified criteria. Solar Energy Support Programme will apprise the application submitted to it for subsidy in IREF specified application form and forward to IREF with recommendation. IREF will ascertain that the applications fulfil the subsidy eligibility criteria. If the applications are found to fulfil the necessary conditions subsidy will be paid as per prescribed procedure.

4.2.3 Institutional Solar Photovoltaic System

In order to be eligible for subsidy, Institutional Solar Photovoltaic System must have gone through the feasibility study to make sure its institutional and operational sustainability through income and or benefits. Solar Energy Support Programme will appraise the feasibility study. SSP will recommend the project to the IREF for approval of the subsidy if deemed appropriate. IREF will appraise the feasibility study report based on HMG/N's subsidy arrangement and if deemed appropriate will give conditional or final approval as may be necessary. Subsidy will be paid after successful installation of the system which will be verified by IREF through IREF specified person/institution.

4.3 Criteria for Subsidy

4.3.1 Micro Hydro

All micro hydro projects will have to fulfil following criteria in the project proposal and pledge to implement and operate accordingly.

- a) The proposed project must be a legal entity as the liability to repay the loan etc. will be on such proponent. In addition, institutional feasibility of the proposed entity must have been demonstrated.

- b) The proposal must have proposed to recover full financial cost of production.
- c) Net present value of the actual cash flow of the project after repayment of loan and interest at 4 percent annual discount must be positive.
- d) The proposed installation must be in area where the national grid is unlikely to reach the load centre within the loan repayment period of the project.
- e) That the MGSP has verified that the project is the least cost option for the proposed area.
- f) Contractual obligations must have been made clear between supplier and consumer.
- g) Community owned and managed projects located outside area centres must be assisted by intermediaries/legal entities such as NGOs, private companies, cooperatives, etc.

Other applicable criteria for subsidy eligibility will be as follows:

Criteria to be fulfilled by New Micro Hydro Projects for Subsidy:

- a) Monthly tariff for the basic consumption of 100 W of power or 15-20 kWh of electricity is at least as high as NEA's average tariff per month.
- b) Investment in the micro-hydro project does not exceed as follows:

Category	Distance from the Nearest roadhead	Maximum Investment Ceiling
A	Less than 2 days walk	NRs 150,000 per kW
B	2 to 5 days walk	NRs 158,750 per kW
C	More than 5 days walk	NRs 171,500 per kW

- c) Productive demand for power in the total production must be above 10 percent.
- d) Create a fund for operation, maintenance and capital replacement.
- e) Multipurpose power-irrigation-drinking water projects will be preferential candidates for subsidy funding and the above investment ceilings will not apply to such projects.
- f) Strong indication that the environmental impact of the project is not unacceptable.

Criteria to be fulfilled by Rehabilitation Micro Hydro Projects for Subsidy:

Existing micro hydro schemes that are functioning below normal capacity or are not functioning can also receive subsidy for rehabilitation. Eligibility criteria for selecting micro hydro scheme for rehabilitation will include the followings

- a) Rehabilitation cost of less than NRs 70,000 per kW.
- b) The maximum ceiling for grant assistance (subsidy) will be fixed at NRs 35,000 per kW based on production capacity after rehabilitation.

- c) Users/ owner contribution of at least 50 percent of the total rehabilitation cost.
- d) Schemes size above 5 kW.
- e) No transport subsidy will be provided on MHP that qualify for rehabilitation.
- f) Scheme not older than 15 years and also not the micro hydro schemes established later than 1999.
- g) Number of households served per kW not less than 7 households.

The rehabilitated schemes should ensure uninterrupted service and a reasonably good amount of income at least to meet regular operational maintenance expenses and expenses required for meeting loan obligations. Indicators of rehabilitated plants should be the following:

- a) Increase in power production
- b) Improvement of reliability of plant
- c) Improvement in load factor – possibility of end use development
- d) Increased revenue for plant

4.3.2 Solar Energy (SHS)

Solar Home System

In order to be eligible for subsidy, a Solar Home System must meet following conditions.

- a) Solar energy (SHS) subsidy will only be available for systems installed in prescribed area of the country by HMG/N.
- b) That the SHS has been installed by IREF /SSP authorized installer.
- c) In order to be eligible for subsidy at least 10 installations at one particular location.
- d) That the Dealers/Manufacturer/supplier are recognised by SSP ensuring that there will be an appropriate after-sales service in the region.
- e) That the installed SHS are the approved model of IREF/ SSP meeting the quality standard specified by SSP for all the parts of the system.
- f) That the subsidy request is made in the IREF prescribed request form.
- g) The proposed area of installation must not be within the vicinity of national grid and micro hydro installation.

Institutional Solar Photovoltaic System

In order to be eligible subsidy, an Institutional Solar Photovoltaic System must meet following conditions.

- a) That the system has been manufactured and installed by a pre-qualified manufacture and installer.
- b) That the Institutional Solar Photovoltaic System is installed in the area specified by HMG/N for the subsidy.

- c) Only the approved systems/components will be eligible for the subsidy.
- d) That the subsidy request is made in the IREF prescribed request form.
- e) That the proposed Institutional Solar Photovoltaic System is financially and institutionally feasible.
- f) The proposed area of installation must not be within the vicinity of national grid and micro hydro installation.

5. Monitoring & Evaluation

Annual impact assessment will be carried out through an independent research agency. The assessment will help in directing support programs and subsidy delivery mechanism towards right direction.