

No.106/148/2010-NT
Government of India
Ministry of New and Renewable Energy
New Technology Group

Block No.14, C.G.O. Complex
Lodi Road, New Delhi-110003
Dated: 14th May, 2010

The Pay & Accounts Officer,
Ministry of New and Renewable Energy,
New Delhi.

**Subject: New Technology Programmes/Schemes for the year 2010-2011 –
Sanction regarding**

Sir,

I am directed to convey the sanction of the President of India for implementation of the following New Technology Programmes / Schemes during the year 2010-2011 at a total outlay of Rs. 40.00 crores (Rupees Forty crores):

- a) Chemical Sources of Energy
 - b) Hydrogen Energy
 - c) Geothermal Energy
 - d) Ocean Energy
 - e) Alternate Fuels for Surface Transportation
2. The Programme Objectives and Details, Project Approval Procedures and Monitoring Mechanisms are given in the Annexure.
3. Each Project Proposal will be examined and processed as per Policy Guidelines of Research, Design, Development, Demonstration and Manufacture of New and Renewable Energy. Based on the recommendations of RD&D Project Approval Committee/RD&D Sectoral Project Appraisal Committee/Technology Demonstration Project Appraisal Committee as applicable, will be further processed for the concurrence of Integrated Finance Division of the Ministry on case to case basis. The Mission Mode projects in the area of Hydrogen Energy & Chemical Sources of Energy would be appraised through the separate "Committee of Experts" constituted for this purpose.
4. The Expenditure on the Programme/Scheme will be met from the budget provision given below:

Demand No.67-Ministry of New and Renewable Energy
2810-New and Renewable Energy

00-Sub-Major Head
104-Minor Head: Research, Design and Development in Renewable Energy
01-Sub Head: R&D in New and Renewable Energy Technologies
04-Detailed Head: New Technologies
31-Object Head: Grants-in-Aid Rs.39,80,00,000/-
20-Object Head: Other Administrative Expenses Rs. 10,00,000/-
28-Object Head: Professional Services Rs. 10,00,000/-

4. This issues in exercise of the delegated powers of the Ministry and with the concurrence of IFD vide their diary No.IFD/210/10-11 dated 6th May, 2010.

Yours faithfully,

(B. Routh)
Under Secretary

Coy to:

1. The Principal Director of Audit, Scientific Departments, DGACR Building, IP Estate, New Delhi-110002
2. All State/UTs/Nodal Agencies/Departments/MNRE Regional Offices
3. PS to Minister (NRE) / PSO to Secretary, MNRE
4. AS&FA /Dir(F)/US(F)/SO(F)
5. Adviser (New Technology)/JS(GS)/JS(HK)/All Advisers, MNRE
6. Chairman & Managing Director, IREDA, New Delhi
7. Scientist-F(RNS)/ Scientist-F(JK)/ Scientist-F(MRN)/ Scientist-F/ (HRK)/ Scientist -F (SA)/ Scientist -D(MCS)/ US(NT)
8. IFD/Cash Section, MNRE
9. Sanction Folder

(B. Routh)
Under Secretary

Programmes / Schemes in New Technology Group for the year 2010-11

I. Scheme/Programme: Chemical Sources of Energy

The focus of the programme on Chemical Sources of Energy is on development of fuel cell technologies. A fuel cell is a device that uses hydrogen (or hydrogen-rich fuel) and air/oxygen to generate electricity through an electrochemical process. If pure hydrogen is used as fuel, fuel cells emit only heat and water as a byproduct. The fuel cell is a highly efficient device. In combination with the use of waste heat, the overall energy efficiencies of fuel cells can be up to 70% or more. Fuel cells can be used for powering automobiles and also for decentralized power generation. MNRE is supporting a wide-ranging programme covering research and technology development on all aspects of fuel cells including materials, components, devices, sub-systems and systems. MNRE has been supporting development and demonstration of fuel cell application for small scale power generation and for transport application. It is proposed to continue to support work on all aspects of fuel cell technologies, their development and demonstration.

2. Objectives of the Programme:

- (i) Research & Development on different types of fuel cells including materials, components etc. used in fabrication of fuel cells.
- (ii) Demonstration of fuel cells for decentralized power generation and in automobiles.

II. Scheme/ Programme: Hydrogen Energy

Hydrogen energy is receiving worldwide attention as a clean, efficient energy carrier/fuel and energy storage medium used for decentralized power generation, transportation and other applications, either by direct combustion in IC engines or in fuel cells. The widespread use of hydrogen by direct combustion in Internal Combustion engines can substitute petroleum fuels in an environmentally benign manner both for vehicular application as well as for decentralized power generation. MNRE is supporting research and technology development activities on all aspects of hydrogen energy including its production from renewable energy sources, storage, applications, safety, etc. It is proposed to continue to support work on all aspects of hydrogen energy technologies, their development and demonstration. It is also proposed to set up the National Hydrogen Energy and Fuel Cell Centre in the campus of Solar Energy Centre of the Ministry at Gwalpahari in Gurgaon, Haryana.

2. Objectives

- (i)** To study techno-economic viability of various processes for hydrogen production from renewable methods through research, technology development and demonstration including setting up of pilot plants for hydrogen production
- (ii)** To develop innovative materials and techniques for safe storage of hydrogen
- (iii)** To support projects on development, demonstration and utilization of hydrogen as fuel for stationary, transport and other applications.
- (iv)** To support development of hydrogen energy infrastructure in the country, covering all aspects of hydrogen including production, transport, storage, delivery, conversion, applications, codes, standards, capacity building public awareness etc.
- (v)** To establish the National Centre for Hydrogen Energy and Fuel Cell.

III. Scheme / Programme: Geothermal Energy

Geothermal energy is an important new renewable energy source, derived from the natural heat of the earth. It can be used as heat energy for various end uses including electricity generation. For thermal applications, the geothermal fluid can be used for space heating, greenhouse cultivation, cooking etc. The studies carried out in the country by the Geological Survey of India have observed existence of about 340 hot springs in the country. Geophysical studies such as Magneto-telluric (MT) investigations have been / are being carried out to assess potential of geothermal fields in different parts of the country. Puga valleys in Jammu & Kashmir and Tattapani in Chhattisgarh have been identified as potential sites for power generation. It is proposed to study the geothermal potential in the country and support development and demonstration of thermal and power generation applications.

2. Objectives

- (i)** To carry out survey/studies for resource assessment/development of geothermal fields of the country.
- (ii)** To initiate geothermal based power generation / thermal demonstration projects at suitable locations.

IV. Scheme / Programme: Ocean Energy

The seas and oceans covering about 3/4th of the earth surface can contribute renewable energy in the form of temperature gradients, waves, tides, and ocean currents. The motion of the wave, tides and ocean currents can be used to generate electricity in an environmentally friendly manner. The Ministry's focus is on development of tidal energy for power generation. Tidal energy potential has been identified in the country in Gujarat, Delta of Sunderban in West Bengal among other regions. It is proposed to undertake the assessment of Tidal Energy potential in the country and develop & demonstrate power generation at suitable sites.

2. Objectives:

- (i) To study the ocean/tidal energy potential in the country
- (ii) To harness ocean/tidal energy for power generation

3. Approval Procedure

Under the above programmes of the Ministry, Research & Development (R&D), Technology Development, Demonstration Projects and projects on other related activities are submitted to the Ministry for the financial support. Such projects are scrutinized in the Ministry for support and approval of the competent authority.

4. Monitoring Mechanism

Periodic monitoring of the projects is undertaken by the Ministry in order to assess the progress of on-going projects. In addition, Experts and other officials are also engaged from time to time to assist the Ministry in monitoring of the projects.

V. Scheme/Programme: Alternative Fuel for Surface Transportation (Battery Operated Vehicle):

As part of this programme, the Ministry of New and Renewable Energy is implementing research and development projects on development of advanced batteries, super capacitors and components of electric vehicles (EVs). EVs are environmentally benign and reduce the consumption of oil. The Ministry is supporting projects at different institutions and industries for the development of EVs and related aspects including improvement of operations range performance and durability. R&D and demonstration activities aimed at developing technologies for Battery Operated Vehicles (BOVs) are proposed to be supported during 2008-2009.

2. Objectives:

- Support for Research & Development projects on advanced high energy density batteries, ultra capacitors, control systems and other components for battery operated electric and hybrid electric vehicles for surface transportation
- Support for pilot project for battery operated and hybrid electric vehicles for field performance evaluation
- Support for projects and activities related to awareness promotion through education, training and for organization of business meet, seminars/conferences/symposia in the area of electric vehicles and hybrid electric vehicles.

Institutional arrangements:

Research, development and demonstration projects on different aspects of electric vehicles and hybrid electric vehicles would be taken up by MNRE through research, academic and educational institutions, national laboratories and the industry.

Monitoring mechanism:

The ministry will monitor the projects to be taken up under this programme at different institutions in the country.

**Battery Operated Vehicles subsidy scheme
Programme Objectives:**

The objectives of the programme are to promote BOVs which are nonpolluting and quiet in operation, conserve petroleum products, curb environmental pollution, to get

feedback on the performance of BOVs in actual operating for continuous improvement of the BOVs, and also for awareness promotion for the eco-friendly vehicles among the people.

ii) . Types of BOVs Covered Under this programme:

- (a) New indigenously manufactured battery-operated buses/mini buses (10 seater and above), with at least 70 km range in a single charge of batteries and a top speed of 40 km/hour. The Central subsidy provided by MNRE will be @ 33% of the cost of vehicle (exclusive of excise duty, sales tax and all other levies), or Rs.3.50 lakhs per vehicle, whichever is less. The beneficiary is required to pay the balance cost of the BOV.
- (b) New, indigenously manufactured battery-operated three wheelers (8 seater and above) having a range of at least 90 kms before recharge of traction batteries used, and a top speed of 45km/hour. The Central subsidy by MNRE will be @ 33% of the cost of vehicle (exclusive of excise duty, sales tax and all other levies), or Rs.80,000/- per vehicle, whichever is less. The beneficiary is required to pay the balance cost of BOVs.
- (c) New, indigenously manufactured battery-operated passenger cars, (each four seater) having a range of at least 90 kms range in a single charge of batteries and a top speed of 50 km/hour. The Central subsidy provided by MNRE will be @ 33% of the cost of vehicle (exclusive of excise duty, sales tax and all other levies), or Rs.75,000/- per vehicle, whichever is less. The beneficiary is required to pay the balance cost of BOVs.

iii) . Eligible Beneficiaries:

- (a) For battery Operated Buses/Mini Buses and Battery Operated Passenger Three wheelers (8 seater and above), the following categories of beneficiaries will be eligible for the provision of subsidy under this programme:
 - 1. Government organizations, Government Undertakings and autonomous institutions.
 - 2. Public/private limited companies, registered voluntary institutions under the Societies Registration Act, Registered professional Associations of repute registered under the Societies Registration Act.
- (b) For Battery Operated (four seater) Passenger Cars, the subsidy will be applicable only for public institutions and not for individuals. Public institutions may include government organizations, public sector organizations, educational institutions, hospitals and tourism and archaeological sites among others.

iv) Methodology of Implementation:

- (a) This programme would be implemented through the nodal agencies and departments of States and Union Territories. The programme implementing Departments and Nodal Agencies should certify the cost of BOVs on the basis of quotations or budgetary quotes for specified categories/types of BOVs for which approval is being sought from MNRE. Proposals should be prepared and submitted to the Ministry of New and Renewable Energy in accordance with the proforma (given in **Appendix-I**) and terms & conditions laid down by this Ministry for this programme along with an undertaking that the vehicles will be properly operated & maintained and that these vehicles will not be sold or disposed of for a period of at least five years from the date of supply. The respective Departments/nodal Agencies must ensure that adequate infrastructure including battery charging facility exists in order to ensure regular operation of BOVs and submit Quarterly Progress Reports given in **Appendix-II**.
- (b) Proposal received from programme implementing Departments and Agencies will be processed on first-come-first-served basis and sanctioned, if found in order by MNRE.

V). Pattern of Central Subsidy:

- (a) Under this programme, the Central subsidy will be applicable only for the purchase of new, indigenously manufactured BOVs as given in paragraph 2 above and as per the eligibility given in Para 3 above. The beneficiary is required to pay the balance cost of BOVs. The beneficiary shall meet all expenditure on taxes as applicable, spares, accessories, instrumentation (such as speedometer, battery voltmeter, battery ammeter, etc.), O&M, performance monitoring, staff etc. This Ministry shall not provide financial assistance except for the sanctioned amount of subsidy and PIC (Project Implementation Charges).
- (b) MNRE will sanction a service charge / PIC of Rs.1000/- (Rupees one thousand) only per BOV purchased under this programme by the eligible beneficiary to the concerned implementing Nodal Agency or Department in the States/Union Territories. The Ministry will not sanction service charge for BOVs purchased by the State Nodal Agency/Department for its own use. PIC would be released to the implementing Department/Agency on the reimbursement basis only after the BOV has been purchased and feedback report on satisfactory performance received in the Ministry.

VI). Release of subsidy:

- (a) 50% of Central subsidy sanctioned by MNRE will be released to the implementing department/nodal agency on receipt of a copy of acceptance of the purchase order by the manufacturer/supplier of BOVs.
- (b) Subsequent release will be made to the concerned nodal agencies / departments only after submission of necessary documents and satisfactory completion of the Terms & Conditions as given in **Appendix-III**.
- (c) The beneficiaries may release their contribution for BOVs directly to the manufacturer. If BOVs are not purchased within six months from the date of issue of sanction for the release of first installment of subsidy amount by MNRE, the amount of subsidy released should be returned to MNRE with accrued interest (as per Government rules) within one month from the date of cancellation of the sanction. MNRE reserves its right to cancel the subsidy without specifying any reasons/without prior intimation to the concerned agency/department under intimation to the nodal agency/department. The State Nodal Agency/UTs must submit the Utilisation Certificate in Form GFR 19-A given in **(Appendix-IV)**.

The implementing departments/agencies should certify the cost of BOV on the basis of letter of intent / Purchase Order for which subsidy is being requested from this Ministry.

VII). Monitoring Mechanism:

The implementing agencies/nodal departments will set up a monitoring arrangement to closely review the implementation of their projects covered under the programme. The Monitoring Committee set up in the Ministry will monitor the projects on quarterly basis. The Ministry has a right to carry out the inspection of the documents to be maintained by the Implementing Agencies.

Proforma for Submitting Proposals to MNRE

Proposals for BOVs should be submitted to the Ministry of New and Renewable Energy (MNRE) by the concerned Nodal Agency/Department as per the following proforma:

1. Name & address of the nodal agency/department
2. Users' name & address (in case BOVs is proposed to be purchased by any other eligible beneficiary)
3. Manufacturer/supplier of BOVs
4. Specification of BOVs
5. Type/number and capacity of the batteries used
6. Pay load capacity
7. Motor rating
8. Range of BOVs per charge of battery
9. Actual price of BOVs (copy of the quotations or budgetary quotes certified by implementing department/nodal agency to be enclosed)
10. MNES share of cost
11. Firm commitment from the proposer for meeting its share of cost for BOVs
12. Number of BOVs proposed to be purchased
13. Status of the organisation (in case of NGOs registered under the Societies' Registration Act, a copy of the Memorandum of Association/Constitution and Membership/Registration Certificate to be enclosed)
14. Undertakings:
 - a) It is certified that infrastructure facility including battery-charging facility needed for regular operation and proper maintenance of battery-operated vehicles is available.
 - b) It is also certified that this organisation shall provide matching funds for the

purchase of BOVs and that expenditure on taxes as applicable/spares/accessories/instrumentation, O&M, performance

monitoring, staff, etc. shall also be borne by this organisation. The amount of subsidy provided by MNRE for the purchase of BOVs under this programme would be utilised for the purpose for which the grant has been sanctioned/released. This organisation will maintain a separate account, if necessary.

- c) This organisation would produce books and accounts for grants received from the Government to the Comptroller & Auditor General, Internal Audit Wing or any other agencies/persons authorised by MNRE.
- d) The Utilisation Certificate and Audited Statement of Accounts for the amount of subsidy released by MNRE shall be submitted to MNRE as per the terms & conditions of the grant.
- e) BOVs including all components purchased out of the MNRE grant under this programme shall not be disposed of or sold for at least four years from the date of supply to any other agency without prior approval of the MNRE.
- f) Necessary documents/certification and progress reports in respect of BOVs purchased under the MNRE programme shall be submitted by this organization to MNRE as per terms & conditions.
- e) The concerned Nodal Agency/Department must ensure that the BOVs purchased conform to the Motor Vehicles Act, 2001 (39 of 2001), which came into force since 27.09.2001. It must also be ensured that the safety aspects of the BOVs are taken care of.
- f) The concerned Nodal agency/Department must ensure that the manufactures of BOVs give warranty for a minimum period of two years from the date of supply.

Date:
Place:

Signature of Head of the implementing Department/Nodal
Agency in the State/Union Territory
Name (in Block Letters) with Designation and Seal

Proforma for Submitting Quarterly Progress Reports:

1. User's Name and Complete Postal Address (with phone/fax number/e-mail address)
2. Date of delivery of BOVs
3. BOVs manufacturer/supplier's name
4. BOVs details (including registration number, chassis/motor numbers, total number of seats, etc.)
5. Type and Make of battery used in BOVs
6. Physical condition of BOVs
7. Data on the operation of BOVs for the period from..... to to be given in the following table:

No. of Day of operation	Total runs per day	Total distance covered per month/year	Energy consumption per km travelled by the BOVs	State the type of problem faced in operating the BOVs	Any other information related to BOVs

8. The number of charge-discharge cycles of batteries used for BOVs may also be given.

I certify that the information given above is correct.

Date:

Place:

Signature of the Head of the Department/Nodal Agency

Name:

Designation with Seal

Terms & Conditions for Implementing Demonstration Programme on Battery Operated Vehicles (BOVs) in the Tenth Plan

1. Attested copy of the delivery challan of BOVs.
2. Attested copy of RC book.
3. Copy of the sale letter.
4. Utilisation Certificate for utilisation of 50% of the subsidy amount released by MNRE as the first instalment for the purpose for which this amount was sanctioned and released (Annexure-III).
5. An undertaking to the effect that BOVs or parts thereof, purchased out of the MNRE grant under this programme shall not be disposed of or sold for at least five years from the date of supply to any other agency without prior written approval of this Ministry.
6. The Ministry or its authorised representative will have the right to carry out inspection of the BOVs and BOV -related documents without prior intimation and at any point of time.
7. The BOV to be procured should be fitted with new deep cycle rechargeable batteries suitable for running vehicles.
8. The manufacturer/supplier of BOV should provide a warranty of two years on all BOVs that should cover all components from the date of delivery of the BOVs.
9. The implementing agency/department is required to submit quarterly progress reports in the proforma given at Annexure-II to MNRE on a regular basis for six months from the date of receipt of BOVs.
10. Operation manuals, training in the operation & maintenance of BOVs and batteries are to be arranged by the concerned manufacturer/supplier to the persons of the nodal agencies/departments/qualified beneficiaries.
11. The utilisation certificate for 50% release made by MNRE and the audited statement of accounts for the total amount of subsidy released by MNRE should be submitted to this Ministry by 31st July in the following financial year. PIC payable to the concerned nodal agencies/departments for the purchase of BOVs other than they themselves, which will be Rs.1000/- (Rupees one thousand only) per BOV and will be paid only after submission of Utilisation Certificate and the audited statement of accounts for the total Central subsidy released by MNRE. The organisation should maintain a separate account.

12. The Comptroller & Auditor General/ Internal Audit Wing or any other agency/persons authorized by MNRE will have the access to the books and accounts of the organization for grants received from Government. MNRE reserves the right to add/alter/change any of these terms & conditions at its sole discretion without prior notice or intimation.
13. This Ministry will not allow any escalation in subsidy amount once approved.

FORM GFR 19-A
[See Rule 212(1)]
Form of Utilisation Certificate

S.No Letter No. & Date Amount

TOTAL

Certified that out of Rs. _____ of grants-in-aid sanctioned during the year _____ in favour of _____ under this Ministry /Department Letter No. _____ given in the margin and Rs. _____ on account of unspent balance of the previous year, a sum of Rs. _____ has been utilised for the purpose of

_____ for which it was sanctioned and that the balance of Rs. _____ remaining unutilised at the end of the year has been surrendered to Government (vide

No. _____ dated _____) will be adjusted during towards the grants-in-aid payable during the next year _____.

2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled/are being fulfilled and that I have exercised the following checks to see that the money was actually utilised for the purpose for which it was sanctioned.

Kind of checks exercised

- 1.
- 2.
- 3.
- 4.
- 5.

Signature _____

Designation _____

Date _____