A momentous epoch in the history of ANERT, 2009-10 drastically altered the vision, mission and the road map of an organisation. New corporate initiatives have come up, new projects launched and systems for technical support, networking, pro-active functioning, accountability and bringing out results established. Very few Government organisations would have witnessed such massive restructuring efforts within a short span. Change management is wrought with pain and resistance but results would start coming up and could be rewarding.

Report of The Activities of the Agency for Non-conventional Energy and Rural Technology for the Year 2009-10

Director, ANERT

Report of The Activities of the Agency for Non-conventional Energy and Rural Technology for the Year 2009-10

Agency for Non-conventional Energyand Rural Technology,
TC No 24/2052, Opposite Thycaud House, Near Police Parade Ground, Thycaud PO,Thiruvananthapuram, 695014

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Executive Summary

A momentous epoch in the history of ANERT, 2009-10 drastically altered the vision, mission and the road map of the organisation. New corporate initiatives have come up, new projects launched and systems for technical support, networking, pro-active functioning, accountability and bringing out results established. Very few Government organisations would have witnessed such massive restructuring efforts within a short span. Change management is wrought with pain and resistance but results would start coming up and could be rewarding.

Year 2009-10 was a momentous epoch in the history for ANERT .Consequent to the decision of the Government of Kerala for launching the Total Energy Security Mission project for proactively reworking the mandate of ANERT in accordance with the spirit of the Seventy Third and Seventy Fourth Constitutional Amendments. ANERT had been at the focus of intense interaction with the various local governments. The objective of the programme was to build up synergies between governments at various levels in planning, implementing and monitoring energy programmes thus making multi-level planning and decentralisation meaningful. The policy initiative of the Government required a drastic reworking of the mission, vision and the roadmap of ANERT and restructuring of ANERT's organisational set up in accordance with the above.

Government order GO(P) No 9/2009/PD dated 18.09.2009 was the end result of the commitment of the Government to realise the above policy outline. The order for restructuring ANERT was declared with a focus to right size the administration, position efficient top and middle level management, strengthen the governance system and putting in place a performance based assessment and result based management system in order to make the organization a vibrant one suiting it's mission, vision and road map.. The task before the ANERT team was to break away from the not so impressive immediate legacy and to re-orient itself with the new expectations and challenges of grass-root level functioning and pro-active micro level planning.

The New Vision, Mission and Roadmap of the organisation detailed in the report of the Committee for Restructuring of the Agency for Non-Conventional Energy and Rural Technology was in the context of the formation of the Total Energy Security mission and the closure of the Integrated Rural Energy Programme.

Closure of the IREP Programme and the Unfinished Tasks

The Integrated Rural Energy programme was terminated by the Government of India in March, 2007. The programme was there after allowed to be continued in a transitory mode for one year. The major unfinished tasks for the Integrated Rural Energy Programme in the state were the following:

Creation of representative community databases on energy resources and consumption at cluster of villages' level and the District level through energy surveys

Preparation of Integrated Energy Plans based on this jointly with the three tier panchayat system and to device mechanisms for the implementation of the integrated energy plans

The backlog of these unfinished tasks along with shortcomings in the systems for accounting ie primarily non-availability of an activity based accounting system, lack of proper Management Information systems and systems for supervision based on the above had posed severe impediments even in the release of balance funds relating to the Integrated Rural Energy Programme.

The inadequacies in the systems for materials management exemplified by the shortfalls in the stores system had undermined the credibility of ANERT before its suppliers seriously upsetting the Supply Chain Management System on the one hand while severely destabilising the upkeep of installations in the field leaving plethora of grievances from customers unaddressed. The IREP personnel who formed the major chunk of the implementation team was a highly demotivated and demoralised lot, running through an ordeal of continuity in the organisation after having put in nearly 10-15 years of service within ANERT,

The serious inadequacies in the Research and Development team to pursue meaningful research on problems confronting implementation and giving leadership to carry out interdisciplinary research was one of the major gaps in not being able to come up with the cluster of village level and District level Integrated Plans.

The middle level management system consisting of officers without any developmental orientation on deputation specialised in mundane admistrative functions also compounded the situation since they tried to steer ANERT in the midst of all these with the least regard or commitment to the mandate and bounden duties of ANERT and fulfilling the challenges.(Adapted from the Report of the Restructuring Committee).

Surprisingly even functions like Proper submission of annual plan documents, Getting release of plan and non-plan funds, Preparing annual statement of accounts and getting it audited, Preparing timely replies for audit queries and audit paras, Representing ANERT properly in statutory fora and getting the recommendations followed up - were at stake.

Serious irregularities existed in matters like declaration of probation, promotion, regularisation of personnel from foreign service , carrying out steps not within the span of control of the organisation set up, evading approval of government etc.

Moreover there was in-ordinate delay in matters pending before legal and statutory authorities etc. Reworking the manpower to suit the new organisational demands, replying properly to the queries from the Administrative department and the Ministry for New and Renewable Energy and Maintaining of overall discipline and routine systems for daily upkeep had also been collapsed. It was in the light of these that the Government realising the need for a total overhaul in the functioning of ANERT, had appointed a committee for Restructuring of the organisation.

Administrative Changes

ANERT as a first step in moving towards the result based management framework of functioning, had issued a comprehensive work division order (for the first time) specifically to assign functions and responsibilities as well as function based designations to the functionaries joining TESM from various streams so that there is clarity on division of work assignments, responsibilities and monitoring functions for better co-ordination, accountability and control. The functional groups and divisions thus formed are as follows:

1 Corporate Management Group
- 1.1 Director's office
- 1.2 Programme Implementation Division

2 Knowledge Management and Technology Support Group
- 2.1 Core Technologies Division
- 2.2 Energy Audit and Systems
- 2.3 Quality Assurance Division
- 2.4 Activity Centre (Standards and Testing)
- 2.5 Activity Centre (Projects)

3 Business Development and Operations Group
- 3.1 Operations and Finance Management Division
- 3.2 Commercial Engineering and Supply Chain Management Division
- 3.3 Business Development, Small Hydro Programme and Internal Controls Division

4 Turnaround and Change Management Group
- 4.1 Human Resources Management and Administration Division
- 4.2 Management Information Services Division
- 4.3 Information Management and Corporate Planning Division
- 4.4 Centre of Excellence Programme Division
- 4.5 House Keeping and Technical Support Division

The ANERT orders AO No 865/ANERT/2009 dated 28-08-2009 and AO No 379/ANERT/2010 dated 20-03-2010 were issued so as to imbibe the visionary policy framework into which ANERT was transcending and to address the unfinished tasks of the IREP programme.

The major components of these office orders were the following.

I. Implementing the organisational restructuring by reverting the staff on deputation

II. Positioning new manpower in place of 1 above and as per the manpower plan approved by the restructuring committee including those to meet the targets of the local government projects undertaken by TESM

III. To devise an activity based accounting system suitable for addressing the past issues of improper classification of accounts and operationalizing project and source wise accounts seamlessly.

IV. To expedite pending accounts and to move towards a TALLY based ERP system of activity based accounting

V. To inculcate strict discipline in day to day maintenance of accounts and ensuring settlements in time,

VI. To streamline Supply Chain Management system by adopting a e-procurement system in accordance with guidelines issued by Ministry of Finance and CVC

VII. Improving the image of ANERT by undertaking vendor meets.

VIII. Firming up stock and inventory management through attempts to close past disciplinary issues and upkeep of records.

IX. Streamlining human resource management matters by rectifying anomalies in matters like putting contract appointments under mutually signed agreements, rectifying irregular probation, improper procedure in absorption from foreign service and improper procedure adopted in regularisation of staff,

X. Incorporating a system of Key Result Area-Key Process Area under the RBM framework for accountability and result oriented functioning indicated as a pre-requisite by the Finance Department for regularising erstwhile IREP personnel.

XI. Initiating the preliminary steps for selection promotion for regular staff of ANERT.

XII. Bringing Research personnel within a framework of accountable work.

XIII. Clearing up pendency of utilisation statements due to Ministry of New and Renewable Energy,

XIV. Proactive approach towards clearing audit paras and giving prompt responses to queries of statutory bodies

XV. Preparing Annual Budget and Plan proposals and getting clearances at appropriate levels

XVI. Streamlining preparation of project documents for local governments and various funding agencies

XVII. Undertaking regular review mechanisms to assess the short comings in institutional functioning and mobilising institutional resources to improve outputs

XVIII. Obtaining Administrative sanctions for implementation of the projects and getting releases based on these.

XIX. Putting in place a field team for implementation integrating ANERT headquarters personnel,TESM project staff, external support systems like Knowledge Support System providers, Corporate Management consultants etc thus providing the pre-requisites for the field implementation programme which is several times the annual programme usually implemented by ANERT

XX. Putting in place corporate initiatives for decentralised energy management, applied research and capacity building in renewable energy technologies etc

XXI. Making the Corporate leadership vibrant by frequent meetings of the Executive Committee, The Mission Group of ANERT and the Committee for overseeing the follow up on restructuring. of ANERT.

XXII. Revitalising the Corporate Management framework by coming up with fresh delegations for the functionaries of ANERT and drawing in new talents into the organisational framework.

XXIII. Launching an effort towards building up systems for documentation and creating Management Information systems for ANERT

XXIV. Implementing an e-governance programme to expedite these

XXV. Planning out a Campus and building for ANERT

E-governance activities

Modern management systems especially those involving substantive change management irrevocably put e-governance initiatives at the central stage. A detailed roadmap for Information Technology in ANERT was prepared. Based on this road map theIT infrastructure for ANERT was strengthened during the period. The infrastructure established included 2 servers, 28 Desktops, 1.no.Heavy duty printer, 1no.Multifunction copier, 1 no. High end scanners, 15 nos. Low end scanners, 15 nos Switches. This was in addition to the earlier existing 20nos. Clients and 18 nos. Printers in ANERT head quarters and district offices. The networking was primarily through wireless since ANERT offices are positioned mostly in hired buildings. However crucial network connections for resource sharing have been done using Ethernet 100 Base-T, using CAT5- UTP cabling standards.. Steps have been also taken to inter connect the ANERT headquarters to the district officers over the State Wide Area Network and establishing 24 x 7 connectivity with the State Data Centre and Network operating Centres over wireless. It is expected that Intranet connectivity and Internet facilities would be available over the network.

A Governance Team has been established and a consultant to guide ANERT in ICT related activities has been put in place. A Web site has been established using Joomla a web composing utility. Revisions are being undertaken. An interactive portal was used for compiling information on the One Million CFL Campaign. The model has been extended by embedding the MIS application for the survey of un-electrified households on the ANERT website.

An application software for vendor registration and report generation was developed by M/s ANTARES systems and KEONICS for this purpose. The application has been debugged, tested and is fully in operation. With the support of KEONICS an application has been put in place for e-tendering.

Efforts have been also initiated to launch the following applications:

(1) “SPARK” for pay roll

(2) “MESSAGE” for work flow and file tracking

(3) “D-SPACE” for documentation and archiving

(4) “TALLY” for financial management inventory management linking district offices of ANERT etc.

Facilities for data entry of service books and for compiling information to roll out “SPARK” are being put in place.

Steps required for the roll out of “MESSAGE” application have been initiated. Orientation of ANERT functionaries in “MESSAGE” has been completed. Masters are to be finalised before the application is operationalised and hands on training could be given subsequently.

“DSPACE” is being positioned in the state data centre Archiving of files to be disposed and current files has been initiated and is expected to be intensified shortly.

"TALLY" based accounts system is sought to be implemented in all the district offices and at the ANERT head quarters. The major constraint in this is the delay in streamlining past accounts and inadequate in-house skills.in accounting.

Operational and institutional Management Systems

The acquisition of 25 acres of land at Palakkad is in the final stage, where it is envisaged to establish the 'Centre of Excellence on Renewable Energy', with the buildings and campus under the Green building concept as per Griha-5 and LEED rating. With this the initiative of the Government to establish a Renewable Energy Technology Centre at Palakkad took a new dimension. A detailed project document has been prepared for this. It is proposed to establish the campus at Palakkad as the "Centre for Capacity Building in New and Renewable Energy and Conservation (C-CNREC)". A broad outline of the campus was also included in the proposal . A Byelaw for the C-CNREC has been also prepared.

A Model Residential Polytechnic is sought to be established in the first phase of the Centre of Excellence. The Polytechnic seeks to meet the extensive technology and skill upgradation requirements for the various field implementation of programmes in New and Renewable Energy Sector in the state as well as outside the state. Specifically this would contribute to the initiatives being undertaken jointly by ANERT with the Local Self Governments and also for the expansion programmes in the Power Sector and New and Renewable Energy Sector in the State. Five laboratories shall be set up under the Centre of Excellence, jointly with premier academic and research institutions in Lighting, Solar, Biomass, Small hydro and Energy Conservation. A detailed project proposal has been prepared and a high level committee constituted to guide ANERT in establishing the MRP.

Efforts have been initiated for preparing a plan for a green building for ANERT Head Quarters at Vikas Bhavan. Revised design based for GRIHA 5 and LEED rating is prepared and has been submitted for approval. An expert committee was constituted for assisting Nirmithi Kendra the builders on the architectural concepts to be incorporated in accordance with the new GOI guidelines.

A detailed proposal for establishing the Kerala Renewable Energy Company (KREC) has been also prepared. This shall be a major breakthrough in the Renewable Energy programmes in the state.

The various proposals prepared by ANERT for establishing the Kerala Renewable Energy Company, Model Residential Polytechnic and the Centre of Excellence at Kuzhalmannam, Palakkad have been submitted to Government and are being processed at various levels.

Spearheading the One Million CFL Campaign

The Concept note on Total Energy Security Mission had highlighted various initiatives in the energy conservation and demand side management sector including a state wide CFL programme. The discussions on the state level programme were bogged down by the limited progress in mechanisms for realising Clean Development Mechanism CDM benefits. However a pilot was eventually launched by the Government of Kerala viz. One Million CFL Campaign and implemented as a joint programme of

Kerala State Electricity Board (KSEB), Total Energy Security Mission (TESM) of ANERT and the Local Self Government Institutions (LSGIs), for the popularisation of energy conserving compact fluorescent lamps to SC-ST and BPL households, replacing and discouraging use of incandescent bulbs whereby saving not less than 25 MW peak power and about 55 MU per annum. TESM-ANERT through its grass root level energy environment corps was entrusted with the finalisation of beneficiary list for the programme and support LSGIs to distribute and install the CFLs in beneficiary houses.

Accordingly TESM- ANERT team carried out the identification of the beneficiaries based on the norms approved by the Coordination Committee on Decentralised Planning of LSG Department. As decided by the Committee the BPL list approved for the Health Insurance programme was taken as the base list for the BPL category. The programme involved multiple validation efforts at the KSEB level and Local Self Government level which demanded very large amount of local organisation and follow up. Compilation of the entire beneficiary data into an electronic database required a stupendous effort for digitisation, data validation and data consolidation. However this gave an insight of how an electronic system could be put to use in maintaining the quality of field implementation.

ANERT had to overcome the hurdles arising out of internal resistance to additional workload, poor capabilities of the organisation in compiling an effective information system, disagreement and resistance to accept the base BPL list as the framework of beneficiary selection in several local bodies which caused delays in getting the final lists approved by the LSGs, poor system of identification of SC&ST beneficiaries available in non-TESM local governments etc. But even with all these limitations the Mission was able to finalise and consolidate the list of 7.93Lakh beneficiaries, formally verified and authenticated by both the Local Self Government concerned and the KSEB. Out of this, as on 02.11.09, 6.17 Lakh CFL lamps were provided and installed in respective households.

The institutional insights of the One Million CFL programme implementation programme were the following:

1. The programme involved data collection at the village and cluster level organised through animators and volunteers identified by local governments.
2. Co-ordination committees were established at the village, Block and District level jointly with KSEB and LSGs
3. Village level integrated conservation plans were prepared by these committees and implemented. Such action plans were aggregated bottom to the Block, District and the state level.
4. A process based approach advocated in Integrated Energy Plan was internalised and put in operation.
5. Resources to the tune of 6.5 Crores of Indian Rupees could be mobilised for the benefit of the downtrodden and marginalised through an effective co-ordinated programme,

Launching a Small Hydro Power Programme

The Concept Note on Total Energy security mission had identified Small Hydro as the most promising resource for development at the local level. This would also have figured as a major component of the village-cluster resource survey and integrated energy planning had they been taken up under IREP..

Three different activities were under implementation by ANERT as part of SHP programme.

(1) Preparation of SHP Database and Atlas:

Preparation of a comprehensive database of potential SHP sites in the State is particularly relevant for pooling in resources from various sectors like the Industries interested in taking up captive power generation projects, Private sector entrepreneurs interested in taking up independent power generation for sale and Local self-Government Institutions interested in operating standalone or grid connected projects for local benefits in their jurisdiction. A comprehensive study and database preparation is also important for exploring the scope of standardization of sites, cluster mode of project development, establishing rural grid, formulating hybrid schemes etc which may increase the economic viability of SHP projects. The project for Reconnaissance Study and Database preparation of probable SHP sites in the State was undertaken with this view. As a part of this project ANERT had organised reconnaissance survey of various probable SHP sites covering 867 of the proposed SHP sites spread in 13 districts (except Alappuzha) and the data is being compiled using a software application developed by C-DIT.

District wise distribution of identified SHP sites

District	Number of identified Sites
Thiruvananthapuram	49
Kollam	31
Pathanamthita	39
Kottayam	32
Idukki	262
Ernakulam	23
Thrissur	42
Palakkad	48
Malappuram	59
Kozhikode	53
Wayanad	48
Kannur	88
Kasargod	93
TOTAL	867

The Compendium, “An Atlas of identified Small Hydro Power sites in Kerala” consisting of 13 Volumes will be completed shortly.

The innovative approach adopted in the study included

1. the participation of local Community Based Organisations for the survey,
2. the involvement of agencies like CWRDM in the field study
3. the trying out of a mechanism of quality checking through trained functionaries positioned by ANERT
4. Linking up support of CWRDM in mobilising hydrology data
5. Linking up the support of CESS and KSLUB in undertaking spatial investigations.
6. Linking up the use of an IT solution provider in handling the data collected and validated by ANERT

(2) RIDF assisted SHP project for Peravoor Block:

RIDF assistance of Rs 500 Lakhs is earmarked for taking up implementation of suitable SHP projects identified through the studies taken up under TESM. Accordingly the team had discussed and decided to propose integrated implementation of SHP sites located in Peravoor Block of Kannur district as it is one among the five blocks in the State identified for the Pilot Project for Integrated Development of Backward Blocks of NABARD as well as the block having the highest population of Scheduled Tribes and the highest percentage of un-electrified houses in Kannur District. The project outline was presented before the State Level Expert Committee of RIDF scheme chaired by Chief Secretary got approved and ANERT was directed to proceed further to prepare and submit DPR.

There are 48 identified SHP sites in Peravoor block with varying capacities located in two river basins – Anjarakandy and Valapattanam. Head and spot discharge of these sites were available from the reconnaissance survey held in Kannur district. The Flow Duration Curve (FDC) of these sites were developed based on past rainfall – runoff data with the help of Kerala State Land Use Board (KSLUB) and Centre for Water Resource Development and Management (CWRDM). Based on these Head and Discharge data possible power potential of these sites were worked out and 14 sites were prioritized for implementation. Details are as follows:

Sl No.	Project Name	Estimated installed capacity of the project in kW
1	Odapuzha	60
2	Chappamala	60
3	Nanjini	80
4	Kollakombil	60
5	Pottenthodu	120
6	Narantha	40
7	Palchuram	60

Sl No.	Project Name	Estimated installed capacity of the project in kW
8	Panniamala	40
9	Mundakkalthodu	160
10	Thazhepalchuram	20
11	Kolappa Areekayam	60
12	Tharappilkandam	80
13	Punchakandam Chembukavu	60
14	Ramachi Major	320
	Total Potential	1220

Detailed Survey was conducted at these sites and DPR submitted to Government. Activities for acquiring of lLand for these project is ongoing.

If the preparation of a database of SHP sites was a major effort towards a cluster based and village survey approach the ifinalisation of the Peravoor Small Hydro project was a major effort towards an Integrated Energy Plan. All the major elements of a power project implementation viz. Undertaking field investigations, developing a detailed design, vetting the designs and optimising them, preparation of detailed estimates, working out the transmission distribution network, obtaining approvals at various levels, organising land acquisition and preparation of the tender document were all carried out in-house.

(3) SHP detailed site investigation projects under LSGIs:

If the projections in the Concept note on Total Energy Security Mission has to be put in practice based on the village-cluster surveys initiated under the programme for preparing the SHP state level database multiple integrated Block and District level action plans have to emerge.and get implemented. This was the objective of SHP detailed site investigation projects under LSGIs.

As envisaged in the project for database preparation of SHP sites, LSGs were promoted to take up most promising sites among the identified locations for detailed investigation so that a sizeable number of sites could be taken up for implementation in the coming years. At present about 485 sites are taken up by 96 LSGIs for detailed study. Grama panchayats had selected and positioned Volunteering Field Assistants for measuring and recording stream flow of these sites. Training for this Voluntary Field Assistants (VFA) has been held through CWRDM in 8 batches February 2010. Necessary field investigation equipments viz., GPS, Altimeter and Salt dilution conductivity type flow gauges were procured for supporting this work. 50 Technical Assistants are trained and positioned to support and monitor the activities.

District level meetings of VFAs are being arranged for scheduling further work. These meetings would be followed by site visits to locate and establish suitable flow measurement segment of the stream thereafter VFAs shall start recording the discharge twice a day.

It is envisaged that preliminary engineering surveys of these sites could be done during the summer months and Detailed Project reports could be prepared by the end of the year.

The Survey of Un-electrified Buildings

In accordance with the action plan projected in the concept note on Total Energy Security Mission, the policy outline of reworking the institutional mandate of ANERT and facilitating pro-active interaction with local governments outlined by the Report of the Committee on restructuring of ANERT and confirmed clearly by the G.O No 9/2009/PD dated 18-09-2009 restructuring ANERT, ANERT had submitted project proposals to various local governments for " Integrated Energy Planning in Local Governments covering baseline survey of energy consumption in un-electrified buildings, mapping of low tension distribution network and assets, sample survey of end-use energy consumption to assess conservation potential."

One of the major activities undertaken as a part of these local government projects was to undertake a baseline survey of the most marginalised sections of the Kerala society deprived of lifeline energy based on the standards prescribed by the Government of India for Rural Electrification.

As a part of the activities for undertaking the Survey of all un- electrified households in the State, registration of un-electrified buildings in TESM local governments has been done through the local government members and other functionaries. Following up on the successes in the use of the One Million CFL Portal a information system was also placed at the centre stage of the survey.

The total registrations as on 16th February 2010 were 1,91,739. This had exceeded the projection of 1,67,000 made initially. The registrations are likely to close around 2 lakhs.

Direct survey of these un-electrified houses had been initiated and completed in 25 local bodies. This includes 1 in Thiruvananthapuram, 9 in Kollam,8 in Ernakulam, 3 in Palakkad and 4 in Kannur. In all other local bodies survey is now scheduled to be completed through NGOs and trained volunteers. The application for data entry and the scheme for reports are being finalised.

The village-cluster survey component of the mandatory survey is a massive field exercise. This is organised through volunteers at the local level and community based organisations, Mere supervision of the logistics involved requires substantial manpower. Carrying out field checks to ensure completeness and quality of the data collected , preparation of quick tabulation reports .requires substantial skills and experienced manpower with proficiency in handling socio-economic and energy consumption related data. Since the present manpower strength of ANERT is not sufficient to undertake this work in time, it was in this context that it was decided to arrange consultancy service for that component. The Futures studies Departmen,University of Kerala has been undertaking pioneering work in the field of Technology, forecasting, modelling and technology adaptation and dissemination. The Department had shown willingness to undertake the Quality Assurance aspects of the Energy Survey of ANERT and undertake modelling studies.. They have a set pattern of undertaking field work for

quality assurance jointly with various Community Based Organisations and therefore it was decided to pursue the same approach here.

The survey of un-electrified buildings was a path breaking achievement because it substantiated the finding made in the concept note for Total Energy Security Mission (TESM) that providing lifeline energy to the most deprived is a very important unfinished political task in Kerala.

Other Programme Implementation Activities

As a part of the roadmap outlined in the concept note for the Total Energy Security Mission the following pilot activities have been initiated.

Energy Audit

The projects for Energy Audit of Guest Houses and Hospitals and implementation of Chulhas have also been initiated during the current year. ANERT had initiated steps to conduct Energy Audit of 28 Government Guest Houses jointly with Tourism Department and of 30 Hospitals jointly with Health Department. Once finalised, the Energy Audit reports would be followed by working out and implementing detailed Demand Side Management (DSM) plan conspicuously utilising renewable energy resources.

Street Lighting Reforms

Steps were initiated to conduct energy audit of street lighting system focussed towards establishing an Intelligent Street Lighting System that would provide most optimum lighting level for the streets with up-to-date technology in which energy savings combined with reduced maintenance costs will be the prime benefits. Pilot study in this regard was conducted in Varkala Municipality. Report and DSM plans are being prepared.

Remote Village Electrification Programme (RVEP)

As a part of the “Pilot project on establishing business models and corporate systems for decentralised power generation” RVEP was initiated in Kasragod, Palakkad, Idukky, Pathanamthitta and Thiruvananthapuram districts mobilising MNRE support. The State component was contributed by local self-governments.

MNRE had accorded sanction for ANERT to implement a project for Remote Village Electrification covering 4204 households distributed in 49 hamlets of 5 districts. District wise distribution of sanctioned number of Solar Home Lighting Units are as follows:

District	No of Units sanctioned
Trivandrum	388
Pathanamthitta	146
Idukki	3120
Palakkad	349
Kasaragod	201
TOTAL	4204

However since it was observed that the proposed beneficiary locations for the project was identified about 3 years back, some of the locations were already electrified through LSG or KSEB schemes and hence a revalidation of beneficiary list to delete the households which are already electrified and to add eligible beneficiaries in their place, keeping the total number without change, is essential. Therefore ANERT had carried out a detailed pre-installation survey whereby investigation teams visited and verified each of the proposed beneficiary household and list out those are already electrified, and prepared the final list of beneficiaries as follows-

- Whoever was eligible from the original list were retained in the new list of beneficiaries also.
- The remaining number of beneficiaries were identified by the respective grama panchayats from within the same villages, whose houses are un-electrified and not likely to be electrified in near future. This selection of new beneficiaries had been done giving first priority to Scheduled Tribe, second to Scheduled Caste and third priority to BPL category.

A digital photograph of the family members in the back drop of their houses of validated beneficiaries and new beneficiaries was also made by the pre-installation survey teams. This process had helped to avoid complaints in beneficiary selection as well as to ensure participation of LSGs in the project. RVEP installations in Thiruvananthapuram District have been completed and in other districts installation is nearing completion.

Power Line Mapping

Power Line mapping was another

of the major activities to be taken up by ANERT under the Total Energy Security Mission programme for local governments under the " Integrated Energy Planning in Local Governments covering baseline survey of energy consumption in un-electrified buildings, mapping of low tension distribution network and assets, sample survey of enduse energy consumption to assess conservation potential.". The major steps carried out under this programme are the following:

- Finalisation of base maps with local government boundaries and ward boundaries if necessary overlaying FMB details and capturing data on minor circuits
- Capturing details of road network in local governments to create a reference grid for power line mapping
- Recording the position of electric posts and recording the details of electric lines on the maps created.

The various steps indicated above require training of various functionaries for data collection, quality checking, digitisation and presentation of the maps. The progress of activities in this connection are as follows. The total number of LSGs covered under the power line mapping programme are 303 in Phase I and 143 in Phase II. The details of base map finalisation of these local governments are as follows:

Sl No	District	Cadastral Map not available	Cadastral maps ready	Cadastral maps to be issued
1	Thiruvananthapuram	1	15	
2	Kollam		31	9
3	Pathanamthitta	6	23	6
4	Idukki	1	16	2
5	Alappuzha	1	21	0
6	Kottayam		10	11
7	Ernakulam	1	43	8
8	Trichur		3	27
9	Palakkad	1	45	6
10	Malappuram	3	17	12
11	Kozhikkode	6	18	7
12	Wayanad		8	18
13	Kannur	1	34	12
14	Kasargod		17	6
Total		**21**	**301**	**124**

FMB Overlay status

Sl No	District	Total	FMB Completion
1	Thiruvananthapuram	15	0
2	Kollam	40	2
3	Pathanamthitta	35	1
4	Alappuzha	22	4
5	Idukki	19	2
6	Kottayam	21	0
7	Ernakulam	52	12
8	Trichur	35	19
9	Palakkad	52	7
10	Malappuram	30	7
11	Kozhikkode	26	17
12	Wayanad	26	0
13	Kannur	47	33
14	Kasargod	24	23
Grand total		**444**	**127**

355 Master Trainers have been trained through district level training programmes for power line mapping in various districts. A methodology of quality checking the field data collected has been finalised. Quality checking exercises have been completed in 3

locations and is pending in 61 locations. Ward mapping exercises is partial in 21 locations. Looking at the logistics involved in the entire process of power line mapping a revised process based on GPS-GIS has been finalised which shall be tried out after the survey of un-electrified buildings is completed.

Dissemination of Renewable Energy and Energy Conservation Devices through LSGIs

As follow up of the campaign initiated by Total Energy Security Mission, Local Self Governments were advised to popularize various renewable energy devices and energy conservation gadgets and the local government department had approved specifications of various NRE devices for dissemination through LSGs Vide GO(MS) No.221/2008/LSGD dated 7th August 2008. Accordingly various Local Self Governments formulated projects in this regard and obtained administrative and technical approvals as per norms from the respective District Planning Committees in accordance with GO(MS) No.128/2007/LSGD dated 14.05.2007, for their implementation.

After the local governments had got their projects approved they had approached ANERT seeking support for the implementation of these projects. Accordingly ANERT with the approval of Local Self Government Department (Vide Circular No.6040/DC2/09/LSGD) sought for formal indent from the various local self governments for procuring these devices through the institution. Consequently a total number of 231 local governments have submitted formal intends for items worth Rs. 86240700/-(Rupees Eight hundred Sixty Two Lakhs and Forty Thousand Seven hundred Only) as listed below.

Consolidated List of indents

Devises	Quantity intended	Total Rate Rs.
Solar Street Light	1410	17195000
Portable Improved Chulha	7848	14730000
Solar Lantern LED	12480	13728000
Study Light	103105	10310500
Solar water heater	295	8451800
Retained Heat Cooker	29928	7482000
Solar Home Lighting System	662	3310000
Task Light	3663	3296700
Fisherman Light	3529	1764500
Solar Dish Type Cooker	252	1764000
Solar Cooker Box	387	1161000
Solar Drier	7	1134000
Vendor Light	37	1110000
Solar Cooker Scheffler	10	750000
Solar Stud	19	53200
Grand Total	**163632**	**86240700**

Many of the local governments have transferred and deposited funds to ANERT as advance vide GO(P) No 95/2008/Fin dated 23.02.2008. The Government had subsequently vide GO(P) No. 9/2009/PD dated 18/09/2009 instructed ANERT to take steps to complete the various TESM activities including the delivery of renewable energy devices and systems and achieve the targets.

In order to complete the delivery of equipments and systems the Director ANERT had notified a process for registration of vendors vide notification Ref. No.TESM/KMTS/0001/2009 dated 02.07.2009 wherein Vendors in 64 categories of products and 9 categories of services were sought. A detailed set of guide lines for vendor registration was also prepared in house and notified by Director ANERT on the web for the sake of transparency and compliance.

In accordance with the Office Memorandum F.No.8(5)/F II(A)/2006 Ministry of Finance proposing introduction of mandatory e-procurement in departments. ANERT had sought the services of Karnataka Electronics Development Corporation and entered into an agreement with them for e-procurement services in line with the professional service agreements arrived by Kerala, Sustainable Urban Development Programme (KSUDP) and Kerala Water Authority. A summary of vendor registration in the relevant categories is provided below.

Particulars of products tendered and details of registration

Sl No	Item	No. of registered vendors	No. of valid vendors
1	LED home lighting system	14	4
2	LED fisherman light	11	3
3	LED lantern	16	5
4	LED main street light	7	2
5	Power pack with inverter	17	4
6	Power pack without inverter	16	6
7	Solar box cooker	5	2
8	Solar dish cooker	5	1
9	Solar scheffler cooker	4	1
10	Solar steam cooker	5	2
11	Solar drier	5	3
12	Solar stud	4	1
13	Solar water heater Evacuated Tube Collector	13	9
14	Solar water heater Flat Plate Collector	14	7
15	LED solar street light	15	5
16	LED study light	14	2
17	LED task light	12	2

Following the vendor registration, tenders were notified in the press and in the web inviting bids from among registered vendors and vendors registered with Ministry of New

and Renewable Energy (MNRE). The tenders were processed as per norms and with the approval of the purchase committee constituted by LSG Department, proposal for placing purchase orders for the following items were submitted to Government for approval.

Item name	Quantity
Improved wood burning portable chulha model for one pot ordinary finish	4424
Improved wood burning gasifier type portable chulha model for one pot extra finish	1830
Improved wood burning gasifier type portable chulha model for two pots extra finish	1594
Solar drier 35Kg/batch,	5
Solar drier 70KG/batch	2
Solar water heater 100 LPD flat plate without heat exchanger	48
Solar water heater 200 LPD flat plate without heat exchanger	17
Solar water heater 300 LPD flat plate without heat exchanger	1
Solar water heater 500LPD flat plate without heat exchanger	8
Solar water heater flat plate 300 LPD with heat exchanger	11
Solar water heater flat plate 500 LPD with heat exchanger	5
Solar water heater 100 LPD ETC without heat exchanger	178
Solar water heater 200 LPD ETC without heat exchanger	2
Solar water heater 300 LPD ETC without heat exchanger	22
Solar water heater 500 LPD ETC without heat exchanger	3
Retained heat cooker Using Expanded Poly Propylene	29928

Programme Management Activities

Meetings of the District Level Co-ordination Committees were held on the dates indicated below

Name of District	Date of DLCC
Thiruvananthapuram	30.07.2009
Kollam	29.07.2009
Pathanamthitta	28.07.2009
Alappuzha	04.08.2009
Kottayam	31.07.2009
Idukki	01.08.2009
Ernakulam	13.08.2009
Thrissur	07.08.2009

Name of District	Date of DLCC
Palakkad	11.08.2009
Malappuram	01.08.2009
Kozhikode	28.07.2009
Wayanad	12.08.2009
Kannur	30.07.2009
Kasargod	27.07.2009

These meetings were held to streamline the CFL programme, initiate the improved Chulha campaign, activate the Energy Environment Corps and strengthen the MIS systems.

Programme Management Division has also taken steps to institute a system of monthly activity scheduling and monitoring. Accordingly following meetings of District functionaries of ANERT where held on the dates indicated below for the purpose of programme planning.

Sl. No.	Date	Venue	Participants	Purpose
1	08.02.2009 09.02.2009	Agricultural Co-operative Staff Training Institute, Monvila	District Co-ordinators & District Vice Chairpersons	CFL Campaign
2	18.04.2009	Government Guest House, Thycaud		CFL Campaign, SHP
3	24.04.2009	Ramanilayam, Thrissur	District Co-ordinators	SHP
4	18.05.2009 19.05.2009	Maria Rani Centre	District Co-ordinators	CFL, District organisation
5	05.06.2009 06.06.2009	Agricultural Co-operative Staff Training Institute, Monvila	District Co-ordinators & District Vice Chairpersons	CFL, SHP, District Panchayat Project
6	15.07.2009	Government Guest House, Thycaud	District Co-ordinators	EEC activation, overall planning for District organisation, DLCC meeting
7	03.10.2009 04.10.2009	AKPCTA Hall and Agricultural Co-operative Staff Training Institute, Monvila	District Co-ordinators, Vice Chairpersons, District Engineers and Chulha Faculty	RVEP, Chulha Programme

The following video conferences were held as per the schedule and for the purpose as indicated below:

Sl. No.	Date	Participants	Purpose
1	07.02.2009	Members of State Planning Board, District Level Officers in SC/ST Departments, DPO	CFL
2.	11.02.2009	Principal Secretary, LSGD, Members SPB, GP Secretaries	CFL

Sl. No.	Date	Participants	Purpose
3.	16.02.2009	TESM functionaries	CFL
4.	19.02.2009	TESM, KSEB Officers	CFL
5.	24.02.2009	DPOs, Vice Chairmen, TESM	SHP
6.	28.02.2009	DPOs, Vice Chairmen, TESM	SHP
7.	30.03.2009	C-DIT Franchises	CFL
8.	07.04.2009	SHP Agencies, TESM functionaries, SPB Members	SHP
9.	05.05.2009	DPO, TESM functionaries, SPB Members	CFL
10.	13.05.2009	DPO, TESM functionaries, SPB Members	CFL, SHP
11.	22.05.2009	KSEB Officers, TESM functionaries	CFL
12.	15.06.2009	District Panchayat President, TESM functionaries, Members SPB	SHP
13.	16.06.2009	District Panchayat President, TESM functionaries, Members SPB	SHP
14.	04.07.2009	Municipalities and Corporation Secretaries, ANERT Director, Members SPB	Street Lighting
15.	22.07.2009	Members, SPB, TESM functionaries	CFL, SHP
16.	31.07.2009	Members, SPB, TESM functionaries	RVEP
17.	24.09.2009	KSEB Officials, TESM functionaries, Members SPB	CFL
18.	05.10.2009	TESM functionaries, Members SPB	CFL, Chulha Programme

The following Programme Management workshops were held to facilitate integration of TESM with ANERT as well as for instituting the system of Corporate Planning:

Sl No	Dates	Venue	Programme
1.	05.06.2009, 06.06.2009	Agricultural Co-operative Staff Training Institute, Monvila	Draft work distribution
2.	09.07.2009	Sisuskema Samithi	Programme Management discussions and clarity building
3.	14.07.2009	Sisuskema Samithi	Programme planning of Programme Management Division, Turn around Change Management Division, Knowledge Management and Business Development Division

Sl No	Dates	Venue	Programme
4.	24.07.2009	Sisuskema Samithi	Plan Co-ordination Division
5.	14.08.09 to 18.08.2009	Maria Rani Centre	Finalisation of work distribution

As could be seen from the above substantial inputs have gone into the Programme Planning Exercises during the year 2009-10. Still this remained an area of weakness and systems of monthly budgeting could not be operationalized. One reason was the massiveness of the logistics and poor in house skills in programme management and monitoring.

Business development activities

Energy Mart

An entrepreneurial mechanism for handling support services for end use consumers and for providing technical support for local governments in the maintenance of new and renewable energy resources stemmed from the concept note of TESM and was firmed up by the Committee for Restructuring of ANERT. Energy Mart is a pioneering concept in Customer Relations Management (CRM). ANERT wants to expand its reach out substantially through Block-Municipality-Corporation level Energy Marts established as individual or Group Enterprise. Technical support for the functioning shall be provided through ANERT. Market support shall be obtained through local governments. A concept note has been prepared and presented at the workshop of Block Panchayat Presidents at Perambra on 18.07.2009. Tie-up with Banks is also envisaged. Direct marketing support is envisaged through National Savings Scheme volunteers and ICDs functionaries. A labour bank of women self help groups is also sought to be integrated with the Energy Mart. Skilled workers shall be given specialised training in repair and maintenance of new and renewable energy devices and shall be linked to energy marts.

Knowledge Support Services consultancy integration

A very important component of the Restructuring Committee report was the aspect of building up expertise to implement programmes at the cutting edge in the New and Renewable Energy Sector. A provision for this was made for this in the five year plan for TESM based on the concept note of TESM. The following technology support initiative categories are envisaged under the Knowledge Support Services consultancy.

1. Training content and curriculum development
    - Training of Engineers
    - Training of Animators
    - Portal development
    - Intervention in Content Development Environment Education
2. Biomass balance studies and generation plan
    - Methodology for wood balance studies
    - Preparing biomass regeneration plans

3. Biomass gasifier and improved chulha action research
    - Configuration tool development for existing chulhas
    - Evaluation of new gasifier models and mechanism for operationalising gasifier based system
    - Evaluation of biogas plant designs and functionaries
    - Evaluation of new chulha models.
4. Solar desalination and power generation
    - Technology development for Solar desalination
    - Developing solar thermal power generation
5. Energy plans, energy audit and surveys
    - Repairs and maintenance of existing installations
    - Methodology for Total Energy Plan preparation
    - Methodology for energy audit
    - Methodology for energy survey
    - Technology development for rural industries

The TOR for these initiatives were considered at length by the Mission Group of TESM 'It was based on this TOR that tender for KSS was notified. Tender for 10 initiatives were notified on May 2008 in the first stage. However the tender process could not be successfully completed and was dropped. Subsequently the tender was re-notified in October 2008. The tender was evaluated and a decision to negotiate with the lowest bidder and finalise the contract was taken at the 25th meeting of the mission group of the Total Energy Security Mission. Subsequently consultations were held with The Energy Resources Institute (TERI) by the Director, ANERT on 12th May and later on 12th &13th September. Accordingly steps have been taken to finalise the contract between ANERT and TERI on delivery of the Knowledge Support Services to ANERT.

Training, content development and extension activities

Training related activities have not been taken up during the period 2009-10 as a well thought activity based on an overall plan, instead isolated training activities have been organised as and when required. The major programmes undertaken were the following:

Sl. No.	Description	Date	participants
1	International Meet on Energy Generation Equipments	2nd to 4th April2009	Joseph George and C Sebastian
2	International seminar on Wind	Sept 2009	Valsaraj P
3	Interactive meet on strategy on Biomass to Energy	23rd and 24th Sept. 2009	Dr.B.Chandrachoodan Nair and C K Chandrabose